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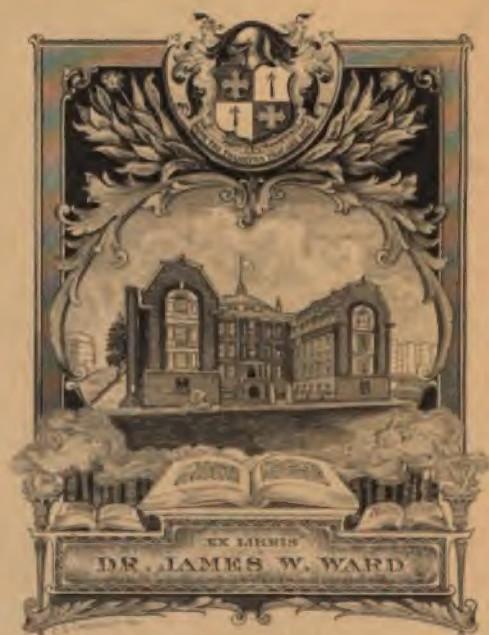
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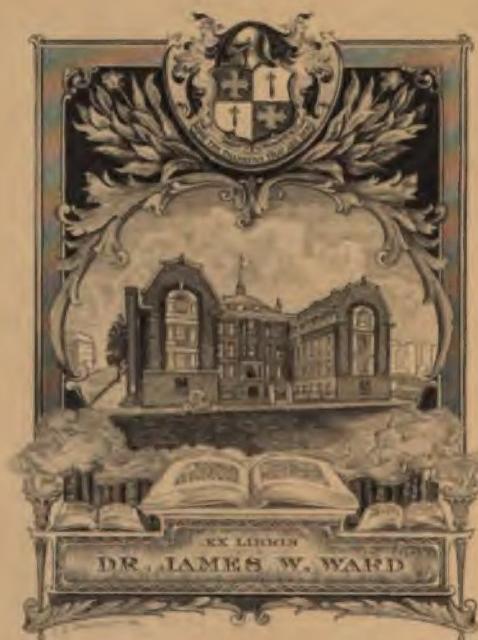
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THE
HOMŒOPATHIC
THEORY AND PRACTICE
OF
MEDICINE.

E. E. MARCY, M.D., AND F. W. HUNT, M.D.

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THE
HOMŒOPATHIC
THEORY AND PRACTICE
OF
MEDICINE.

GENUS VII.—INFLAMMATORY DISEASES OF THE KIDNEYS
AND URINARY ORGANS.

1. NORMAL ANATOMY OF THE KIDNEYS.

WHILE the subject of Renal Diseases is under consideration, it may be interesting to present a brief *anatomical* and *physiological* description of the healthy kidney, with the ordinary physical and chemical character of normal urine. By such a course we enable the medical man to compare, with facility, *morbid* with *healthy* conditions of the organ. The great advantages of this mode of procedure, in placing concisely before the reader every thing pertaining to these organs, both *normal* and *abnormal*, and the amount of time and labor thus saved in looking up reliable authorities, will be apparent to every one.

Among the writers who have distinguished themselves in extending our knowledge respecting the anatomy and physiology of the diseases of the kidneys, we cite the following: Todd and Bowman, *Phys., Anat. and Phys. of Man*; George Johnson, *On the Diseases of the Kidney, &c.*; Hassall, *The Urine in Health and Disease*; Thudicum, *A Treatise on the Pathology of the Urine*; Basham, *On Dropsy, connected with Disease of the Kidneys*; Beale, *Illustrations of the Constituents of Urine, &c.*; Rayer, *Traité des Maladies des Reins*; Lehmann, *Physiological Chemistry*; Becquerel, *Sémeiotique des Urines, &c.*; Frerichs, *Die Bright'sche Nierenkrankheit und deren Behandl.*; Prout, *On the Nature and Treatment of Stomach and Renal Diseases*; Scherer, *Annal. der Chemie und Pharmacie*; Christison, *On Granular Degeneration of the Kidneys*; Bird, *Urinary Deposits, &c.*; Bence Jones, *An. Chem. in relation to Stomach and Renal Diseases*; Solon, *On Albuminuria*.

The researches of these authors have been so extensive, and their observations and illustrations are so minute and accurate with regard to everything pertaining to the kidneys, in their healthy and diseased states, that we shall not hesitate to avail ourselves largely of their valuable experience.

THE ANATOMY AND PHYSIOLOGY OF THE KIDNEYS.—*Location.*—The kidneys are located deeply in the lumbar region, on each side of the spine, and "directly beneath the ribs of the lumbar region."

Form.—Symmetrical glands, in form much like a French bean, with their convex margins directed outwards, and their concave borders or hilums, towards the spine.

Size.—From four to four and a half inches in length, about two inches in breadth, and from one to one-eighth inches in thickness.

Weight.—From four and a half to five and a half ounces.

Anatomical Relations.—The ascending colon lies in front of the right, and the descending colon in front of the left kidney. A small portion of the duodenum touches the anterior surface of the right kidney. The spleen, and the lower part of the stomach, when distended, are directly over the upper portion of the anterior surface of the left kidney,—the former organ being in actual contact with it. The posterior portions of the kidneys are in close proximity to the lumbar and psoas muscles, and in contact with the diaphragm.

Renal Capsule.—A strong, fibrous membrane enveloping the kidneys, attached externally to a bed of adipose tissues, and internally to the gland itself; giving out here and there fibrous attachments to the cortical substance and receiving in return a number of small vessels; connected above with the fibrous layer of the pelvis, and at the hilum with the ureter.

Renal Surface.—On the surface of the kidneys are eight to ten imperfect fissures, indicating the original lobular divisions of the organ during intra-uterine life. Other lobular demarcations are perceptible, arising from a peculiar arrangement of the stellate veins upon the renal surface. These veins enter the cortex vertically from its surface, and during their passage to the hilum are recipients of blood from the venous plexuses of the *tubuli uriniferi*.

Renal Matrix.—A tissue composed of a firm, transparent, fibro-cellular net-work, in which the entire substance of the kidney is embedded. The tubes and blood-vessels of the gland traverse the matrix in all directions, and, in a section of the kidney, may be recognized as deep-red oval spots, surrounded and supported by the intervening meshes of the matrix. Todd and Bowman suppose that its only office is to serve as a support for the tubes and capillary vessels.

Substance of the Kidney.—Anatomists have divided the kidney into two separate portions, termed *cortical* and *medullary*.

Cortical portion.—The external and cortical portion is from two to six lines in thickness, of a reddish color, soft consistence, and dotted throughout its structure with a number of minute, deep-red granular spots—the Malpighian corpuscles. It is composed chiefly of the convoluted uriniferous tubes, and the Malpighian bodies.

Tubuli Uriniferi.—These convoluted tubes consist of a delicate basement membrane, attached to the matrix, and lined with epithelial cells, whose office it is to separate from the blood, the urea, uric acid, the sulphates, the phosphates, and the other solid constituents of the urine. These tubes terminate at, and are continuous with the Malpighian corpuscles, and are connected below with the straight tubes of the medullary portion, which receive the urine as it is secreted by the Malpighian bodies and the cells of the convoluted tubes.

Malpighian Bodies.—Are made up of small round tufts of capillaries from the afferent, and terminating in the efferent vessels, and enclosed by capsules lined at their lower thirds with epithelium. Their function is to separate from the blood the aqueous portion of the urine.

Medullary Portion.—The internal medullary portion constitutes the remaining part of the gland, is less soft than the cortical substance, of a deeper red than the cortical portions, although Todd and Bowman describe it as paler, and its substance is arranged in the form of cones, named from their discoverer, pyramids of Malpighi. These cones or pyramids are made up of the straight tubes, which are continuations of the convoluted secreting cortical tubes, and appear to be simply channels for conveying the urine from the secreting cells to the pelvis of the kidney. They are lined by a thin squamous epithelium which serves to shield the basement membrane from the irritation of the passing urine. As the tubes proceed from the apices of the cones to the cortical substance, they throw off numerous anastomosing branches, which become more numerous, and of smaller diameter as they approach the bases of the pyramids. The number of pyramids is usually placed at from ten to fifteen, and their apices float freely in the pelvis of the kidneys. No Malpighian bodies have been observed in this portion of the organ.

Renal Blood Vessels. The following is Todd and Bowman's description of the vessels of the kidney: "The renal arteries divide into four or five branches, which enter the kidney at the hilum between the vein and the ureter. These vessels are surrounded with a quantity of fat. They pass between the papillæ to the bases of the cones, over which they spread. From these arteries smaller branches are given off, which ascend in the cortical substances nearly to the surface, and, in so doing, give off on all sides, a number of small terminal twigs, the afferent vessels of the Malpighian bodies. Arrived within the capsule,

the small afferent vessel at once divides into four or five branches, each of which again divides dichotomously. The small capillary vessels form loops, which project towards the opening of the uriniferous tube. The blood is received from these vessels, which lie towards the outside of the tuft, by branches of the efferent vessels which converge towards the more central part of the tuft to form one trunk, which leaves the Malpighian body, and soon breaks up into a plexus of capillary vessels, in the meshes of which the tubes lie. The terminal arterial twigs with their appended tufts, when injected with vermillion, have been compared not inaptly to a branch of currants."

EXAMINATION OF URINE.—General Principles.—The first urine voided in the morning or at the period of longest fasting from food and drink, is the truest expression of the kidney secretion, and contains the largest proportion of solids. This is the urine of the *blood*, as distinguished from that of the *food and drink*.

As an average, in relation to the general habit of body, or with a view to the influence of paroxysmal diseases, &c., Chossat adopted the method, afterwards approved by Lecanu, Becquerel, Lehmann, Thudicum, and other authorities, of collecting the whole of the urine during several days and nights consecutively, and mixing in one mass what had been voided during twenty-four hours, before proceeding to the analysis of this average urine. Finally, an average is taken of the variations during several successive periods. Lehmann insists upon the necessity of this method, and advises, whenever it is impracticable, to confine the analysis to the solids of the urine.

For practical convenience, Thudicum advises the use of a flat-bodied glass, with a narrow, turned-up neck, and a mouth fitted to the requirements of the sex, either funnel-shaped or ellipsoid. The neck should fit into a gap in the front border and wall of the bed-pan so that the penis shall lie easily in the neck of the urinal, and no urine be lost. These urinals should be graduated upon a scale of fluid ounces up to fifty or sixty, or centimetres two thousand, with forty divisions.

For the quantitative analysis of healthy urine, see the "Practical Handbook of Medical Chemistry," by John E. Bowman, Am. ed., p. 41; or, "Thudicum's Pathology of the Urine," Chap. 2; or "Becquerel, *Sémantique des Urines*," Chap. X; or "Lehmann's Physiological Chemistry," Am. ed., Vol. 2, p. 149; or "Carpenter's Human Physiology," Am. ed. of 1858, p. 389. Other physical properties of urine are treated of in the same connection.

For estimates of the solids of the urine, based on its specific gravity, &c., see also, Johnson, *On Diseases of the Kidneys*, p. 43; or Golding Bird, *On Urinary Deposits*, p. 46; or Christison, Table, lib. 7, of *Prac. Med.*, Lond.: 1840, vol. iv.; or Berzelius, *Lehrbuch der Ch.*, 3d ed., vol. x, p. 285.

For a practical approximation to the specific gravity of the whole urine, test, by the urinometer, that which is passed first in the morning and last in the evening, and then strike an average. Lehmann prefers the direct weighing of equal volumes in glass flasks,—thermometric and barometric relations being taken into account. The specific gravity of the glass, and the co-efficients of expansion of the air and water for a vacuum, by means of logarithms or a couple of algebraic equations. See Schmidt's *Entwurf einer Untersuchens-Methode thierischer Säfte*; or Thudicum's work pre-cited, p. 33. The Pycnometer, made to facilitate this operation, contains a thermometer in its stopper. Becquerel measures the density of urine with Baumé's areometer. (See p. 13.)

NORMAL URINE.—PHYSICAL CHARACTERS.—Quantity in Health. This varies chiefly with the proportions of water, but averaging, under ordinary circumstances, about thirty ounces in summer and forty ounces in winter. The lungs and skin normally, the intestinal canal and serous membranes abnormally, may supply the function of the kidneys in evacuating the water of the urine, but as the secretion of water is merely accessory, not essential to their function, so our chief attention must be paid to the relative proportions of the different solid constituents.

These may normally vary from 0·20 to 0·30, or from forty to fifty grammes (Becquerel), or 1000 grains (Todd and Bowman), in twenty-four hours, for a man who lives freely; but less for the aged, and for women and children, whose urine is more watery.

Specific Gravity.—Making a fair average, it may be placed at 1020. But, in conditions of health, its density varies from 1010 to 1025. Normal urines of 1017 have 28·5 solid parts. (Lehmann.)

Aqueous urines, when not accounted for by the quantity of fluids imbibed, or by the chill and moist state of the atmosphere, are sometimes symptomatic of emotional agitation,—of joy, fright, anxiety, or of nervous disorders; hence they are oftenest remarked in the female. Polydyspia, anaemia, diabetes, and hysteria are cited by Becquerel as the states in which the urine is most aqueous.

A healthy adult passes from thirty to forty ounces of urine in twenty-four hours—the quantity in summer varying from thirty to thirty-five ounces, and in winter from thirty-five to forty ounces.

Of the solid constituents of healthy urine more than one-half is urea. This is derived in part from the metamorphoses of the tissues (probably the gelatinous tissues), and in part from innutritious and unassimilated food. The proportion of urea is increased by the use of animal food and active exercise, and diminished by vegetable and other non-nitrogenous articles. In or out of the body, it is readily converted into Carbonate of Ammonia; as one atom of urea and two atoms of water

form two atoms of Carbonate of Ammonia. The causes which determine this conversion are various. Among them may be cited:

In cases of uræmia, it is an interesting question, whether the morbid effects are due to the presence of the unchanged urea in the blood, or to its conversion into Carbonate of Ammonia. A careful *proving* of these two substances would aid us in deciding the point, and might afford valuable hints in treatment.

Uric-acid exists ready formed in the blood, and is found in healthy urine in the form of Urat of Ammonia. Johnson supposes that it forms less than $\frac{1}{700}$ part of healthy human urine. Prout supposes that it is derived from the decomposition of the albuminous tissues; while Liebig maintains that it results from the decomposition of the nitrogenous tissues.

Ammonia is another constituent of healthy urine, and is found in the form of Urat of Ammonia. 1000 parts of urine contain from 2·16 to 2·19 parts of Ammonia. Hippuric acid is another healthy constituent of healthy urine, and forms about $\frac{1}{700}$ part of the entire quantity excreted. This acid abounds in carbon, and is usually abundant in consumptive and other patients, whose blood is imperfectly decarbonized.

The sulphates of healthy urine are chiefly those of Soda and Potash, although Sulphates of Lime, Magnesia, and Ammonia are usually present in minute quantities. They are supposed to be derived in part from the metamorphoses of the tissues, and in part from the food. Unoxidized Sulphur is also found in the urine, but its precise combinations are not yet fully understood. According to Ronalds, from two to five grains of Sulphur are excreted daily.

Phosphates of Potash, Soda, Lime, Ammonia, and Magnesia, are also found in minute quantities as constituents of healthy urine. They are also derived from the changed tissues and from food. Unoxidized Phosphorus, in minute quantities, is also present in normal urine.

From the analysis of normal urine we observe, that traces of the Chlorides of Sodium, Potassium, Lime, Ammonia, and Magnesia are present, and that they are derived chiefly from the food.

Color.—The color of healthy urine has been termed by different writers, amber-colored, straw-colored, sherry-wine-colored, yellow, &c. We know of no term truer or more expressive, than amber-colored. As already observed, in infants, females, aged persons, and in certain anaemic conditions, the urine is more watery, and consequently paler in color.

Red urines generally indicate an excess of acid, a high specific gravity, and the presence of a large proportion of solids. Many causes may contribute to the production of highly-colored urine in health; like an undue elimination of the water through the pores, abstinence from drinks, and the use of highly-nutritious and highly-seasoned food.

The use of certain drugs and beverages may also give a red tinge to the urine. Red urine is also an accompaniment of many abnormal conditions, like fevers, dropsies, and maladies characterized by a rapid decomposition of the tissues and the blood. The acid which gives the red color to urine is the Bi-phosphate, or Acid-phosphate of Lime, and not uric or lactic-acid, as is generally supposed.

Deep-yellow urine indicates the presence of bile.

Dark urines—brown, blue, or black, are observed during the progress of many malignant diseases, and are due to rapid morbid changes in the tissues and to a decomposition of the blood. Black urine is sometimes voided after long-continued epileptic convulsions, in consequence of protracted and spasmodic muscular contraction. Brown, red, or blackish urine is sometimes due to the presence of blood. Under the microscope, the globules appear deformed and irregular, and they finally disappear. Amorphous fragments are then found similar to those observed in albuminous urine.

Turbid urine indicates, first, the presence of mucus with diminished density, paler color, and, after standing a few hours, a separation into an upper and clear layer, and a lower and turbid and opaque one, with ammoniacal odor, in consequence of the decomposition of urea into carbonate of ammonia, which mucus rapidly determines. Second, turbid urine is also caused by the presence of pus. Such urine is less dense than natural, of a greenish color, clears soon after emission, and deposits a thick, whitish, and fetid sediment. Like mucus, it hastens the conversion of urea into carbonate of ammonia. Under the microscope, pus-cells are observed in the upper or transparent stratum, at first very numerous, but, after ten or twelve hours, (as in case of blood-globules), they disappear, and a kind of granules are found in their stead.

Sediments.—The sediment of acid urines is composed of uric-acid crystals, acid urates of soda, ammonia or lime. The sediment of alkaline urines consists of carbonate and oxalate of lime, and ammoniacomagnesium phosphates. Sediments of pus, mucus, and blood-globules are not unfrequently found. The composition of urinary sediments is so various, arising from the decomposition of the urine and its waters, that we can only allude to them here, and refer the reader to Becquerel, *On the Urine*, and to Thudicum's *Pathology of the Urine*, for more minute information upon the subject.

Acid Urine.—Normal urine is generally acid, as may be proved by test-paper. By standing it becomes more acid, and passes through an acid fermentation, resulting in the separation of reddish-yellow rhomboid-shaped crystals under the microscope. Acid urine is deep-colored and dense, and the acidity is derived from the bi-phosphate, or acid-phosphate of lime, and not, as is commonly supposed, from the uric or

lactic acid. Liebig attributes the acidity of the urine to the presence of acid-phosphate of soda. Where great accuracy is not requisite, the urine may be tested for acidity with litmus paper. The tests should be applied at different periods of the day, and an average drawn; since the degrees of acidity are constantly changing from the food and drink consumed, from fasting, exercise, &c.

Neutral Urine.—This is only ordinary urine very much diluted, like that which is observed in anaemic subjects.

Alkaline Urine.—This is rarely observed. Its sources are blood, pus, and the decomposition of urine or carbonate of ammonia in the bladder—the last being the most frequent. The most frequent determining cause of this alkalinity is the action of the oxygen of the air upon the substances cited. But the urine may be alkaline at the instant of its secretion in the kidney. After standing for a considerable period, acid urine sometimes becomes alkaline, in consequence of the decomposition of urea, and the development of carbonate of ammonia, ammonio-magnesian phosphates, and phosphate of lime. This result may likewise be produced by boiling urine for several hours.

COMPOSITION OF URINE.—When we consider the various circumstances which are in constant operation to modify the composition of urine, it will not appear surprising that chemists have presented us with such diverse analyses. The urines of the claret-drinking Frenchman, of the beer and port-drinking Englishman, of the lime-water drinking Yankee, and of the fruit-consuming denizens of tropical climates, must of necessity present great diversities in chemical composition. Even under any circumstances, the variety of food and drinks, atmospheric changes, habits of exercise, mental emotions, excessive mental or physical exertion, continual modifications are occurring in the composition of the urine. It is evident, therefore, that any analysis which may be presented must be regarded as only an approximation to the actual result.

We place before our readers an analysis of Becquerel, quoted from Johnson's "Diseases of the Kidney" p. 48, and another from Berzelius.

"This analysis of Becquerel was adopted by Dr. Prout as being the most accurate. Dr. Prout took as a standard, thirty-five ounces of sp. gr. 1020, and employing M. Becquerel's data as the basis of his calculations, he obtained the results which are shown in the following table; the proportion of solids and liquids being thirty-three of the former to 967 of the latter."

COMPOSITION OF 1000 PARTS OF URINE.

Water,	967.
Urea,	14.230
Uric-acid,468

Organic matters inseparable from each other,	$\left\{ \begin{array}{l} \text{Lactic acid?} \\ \text{Coloring matter,} \\ \text{Extractive matter,} \end{array} \right\}$	10.167
Salts ..	$\left\{ \begin{array}{l} \text{Chlorides} \\ \text{Phosphates} \\ \text{Sulphates} \end{array} \right\}$	$\left\{ \begin{array}{l} \text{Ammonia} \\ \text{Lime} \\ \text{Soda} \\ \text{Potash} \\ \text{Magnesia} \end{array} \right\}$
			8.135
			1000.000

Berzelius gives us the following table as the

COMPOSITION OF 1000 PARTS OF URINE.

Water,.....	933.
Urea,.....	30.10
Uric-acid,.....	1.
Sulphate of Potassæ,.....	3.71
Sulphate of Soda,.....	3.16
Phosphate of Soda,.....	2.94
Chloride of Sodium,.....	4.45
Phosphate of Ammonia,.....	1.65
Muriate of Ammonia,.....	1.50
Free Lactic-acid,	
Lactate of Ammonia,	
Phosphates of Lime and Magnesia,.....	17.14
Animal matter insoluble in Alcohol,	
Fluoride of Calcium,.....	a trace.
Silica,.....	a trace.
Mucus of the bladder,.....	0.32
1000.000	

SOLIDS OF NORMAL URINE.—*Urea.* Chemical composition: $C_2H_4N_2O_2 = 60$, sp. gr. 1.35. Of the solid constituents of healthy urine, urea forms from $\frac{77}{100}$ part. It forms flat quadrilateral prisms, with aspect and taste like Nitre. It belongs to the class of *organic bases*, and forms crystallizable compounds with several of the acids; is soluble in five parts of cold or two parts of boiling alcohol—in its own weight of cold water, and in every proportion of boiling water; is insoluble in ether; is permanent in the air; fuses at 250° F., and at a higher temperature yields by spontaneous decomposition, ammonia, cyanate of ammonia, and dry solid cyanuric-acid. According to Johnson, 270 grains, or more than half an ounce of urea is excreted by a healthy man in twenty-four hours. It readily results from the transformations of various azotized matters, and, when not removed by the kidneys, it accumulates in the blood, and appears in the saliva, the bile, the gastric secretions, in nearly all the humors, and is so abundant in the sweat as to form, after spontaneous evaporation, a blueish-white crust, especially upon the face. The quantity of urea is in-

creased by all causes which determine rapid metamorphoses of the tissues. Its prolonged retention in the blood gives rise to what is termed uræmic poisoning, to which we shall refer hereafter.

For excellent methods of ascertaining the absolute quantity of urea in urines, we refer the reader to Thudicum's work on the "Pathology of the Urine," pp. 52, 67, and 69—"Methods of Liebig, Bunsen, and Davy." When the quantity of excreted urea continues above or below the natural standard for any considerable period, disease may be inferred. Among the causes which determine its *diminution* in the urinary secretion are insufficient food, impaired digestion, chronic maladies, anaemic conditions and diseases of the convoluted tubes of the cortex of the kidneys.

The principal causes which form the excretion of an *excess* of urea, are the assimilation of large quantities of nutritious food, the use of stimulants, febrile disorders, and general activity of the circulatory and digestive functions.

Uric-acid.—Chemical composition : $C_{10} H_4 O_6 N_4 = C_{10} H_2 O_4 N_4 + 2HO$. Pure uric-acid, according to Brande, is a "soft, white, crystalline powder; it is insipid and inodorous; it reddens moistened litmus paper. It is almost insoluble in cold water (requiring, according to Bensch, from 11,000 to 15,000 parts), but soluble in between 1,800 and 1,900 parts of boiling water; it is insoluble in alcohol and in ether." When it is decomposed by heat it yields carbonate of ammonia, hydrocyanic acid, empyreumatic oil, cyanuric acid, urea, and carbon. It forms .468 in 1000 parts of normal urine, according to Becquerel. The average amount discharged by a healthy man in twenty-four hours is stated by Becquerel to be from 0.49 to 0.56 grammes. The proportions, however, may vary much in different individuals without any impairment of the health—such variations depending upon the quantity and quality of food and drink consumed, habits of life, &c.

Uric acid in combination with one or more bases—ammonia, soda, or lime—is one of the most common sediments of the urine. Uric-acid, being insoluble in the blood, can only exist in this fluid in the form of a urate—chiefly urate of soda—and is separated by the kidneys, passes to the pelvis of the kidneys, to the bladder, and thence out of the body as a urate of soda. But, during the passage of the latter through the urinary organs, portions of it are often decomposed, and uric acid set free by the free phosphoric and lactic acids of the urine. This decomposition may occur in the kidney, in the bladder, or after the emission.

In order to ascertain whether the urine holds in solution a urate, we add to it either nitric, acetic, or muriatic acid. If uric acid is speedily precipitated, we infer the presence of a large quantity of the urate;

but, if a long time elapses before a deposit is apparent, it indicates the presence of only a small quantity of the salt. In all cases of albuminuria either nitric or muriatic acid should be employed, as nitric acid precipitates albumen.

The following is Dr. Golding Bird's *diagnosis of uric acid deposits*: "When heated in the urine, the uric acid deposit does not dissolve, the crystals merely become more opaque. They generally become more distinct, from the solution of the urate of ammonia, which is frequently mixed with them, and sometimes completely conceals them from view. Hence the best mode of discovering this deposit is to warm the urine, when turbid from excess of urate of ammonia, in a watch-glass: the acid becomes visible at the bottom of the glass as soon as the urate dissolves."

CREATINE.—General Appearance. In its crystallized form it is a colorless, transparent, and glossy substance.

Chemical Composition.— $C_8 H_9 N_3 O_4 + 2 Aq.$

Specific Gravity.—1·35 to 1·34.

Quantity in Normal Urine, and whence derived.—An excretitious substance, derived from the muscles; excreted from the blood by the kidneys, and passing thence into the bladder and out of the body; a constant constituent of the urine, but present in very small quantities.

Quantity Passed in Health in Twenty-four Hours.—Thudicum places the average quantity passed in twenty-four hours at 0·305 grammes.

How Increased or Diminished.—The quantity is increased by muscular action, febrile conditions, and whatever produces rapid metamorphoses of the muscular tissues. The causes which tend to diminish it are muscular inactivity, anaemic conditions, feeble action of the circulatory and respiratory systems.

Mode of Detection.—First evaporate the urine to a dry extract, then, with a solution of ammonia, dissolve out the creatine, and finally evaporate the solution of ammonia, leaving the creatine in a crystalline state. Under the microscope these crystals present themselves in various forms, but may be readily distinguished by accustomed observers. (See *Hassall on Urinary Diseases*.)

CREATININE.—General Appearance. Creatinine crystallizes in irregular groups of very transparent and light-colored crystals. They may be distinguished from those of creatine by their lack of lustre. Creatinine is usually present in the urine in a free state. Much of it is supposed to be derived from the conversion of creatine into creatinine during its passage through the urinary organs, and after the urine has been evacuated.

Chemical Composition.—Formula: $C_8 H_7 N_3 O_2$. It is more

soluble in water than creatine—one part dissolving in 11·5 parts of water at 60° F. Its chemical character is almost identical with that of ammonia.

Specific Gravity.—The specific gravity of the crystals is about equal to 1·35.

Proportion in Normal Urine.—Always greater than that of creatine, from whence it is derived.

Quantity Passed in Twenty-four Hours.—The average quantity passed in twenty-four hours in health, varies, according to the experiments of Thudicum, from 5·61 to 9·66.

From whence Derived.—An excrementitious substance, derived in part from metamorphosed muscular tissue, and in part from the conversion of creatine into creatinine after the urine has been separated from the blood by the kidneys.

Causes which Increase or Diminish It.—Like creatine, it is increased by those causes which effect a rapid disintegration of the muscular tissues, and diminished by those conditions which retard those muscular transformations.

Mode of Detection.—Same as for that of creatine.

HIPPURIC ACID.—*General Appearance.* In its crystalline state it is in the form of "delicate silky needles or rhombic prisms;" taste bitter; sparingly soluble in cold, but more readily in boiling water, and still more soluble in alcohol. Supposed by Liebig to be a constant constituent of normal urine, in about the same proportion as uric acid; but the observations of Duchek do not confirm this opinion.

Chemical Composition.—Formula: N.C. 18. H8. O5 × Aq. It is readily decomposed by nitric acid, and converted into benzoic acid. It enters into combination with several alkaline and earthy bases to form the *hippurates*.

Quantity in Normal Urine.—Much diversity of opinion prevails upon this point. According to Liebig, uric acid and hippuric acid are present in healthy urine, in about equal proportions; while Hoesle and Duchek deny that the latter is a normal ingredient of this secretion.

Quantity Passed in Twenty-four Hours.—The quantity secreted depends much upon the habits of the individual and the kind and quantity of food consumed. But the average amount may be placed at from 0·40 to 0·50 in twenty-four hours.

From whence Derived.—It is derived principally from the non-nitrogenous elements of the food (*Liebig*). Bird supposes that it may owe its origin to an undue retention of carbon in the blood, from defective action of the lungs and liver.

How Increased or Diminished.—Increased by rest and by the use of fruits, like pears, plums, cherries, apples, &c., and diminished by ac-

tive exercise in cold air and rigid abstinence from stimulants, coffee, and meats.

Mode of Detection.—Turbid urine indicates the presence of considerable hippuric acid, while clear urine usually contains but a small quantity. For other methods of detecting it see "Thudicum on the Pathology of the Urine," p. 143.

Coloring Matter of Urine.—Thudicum gives the name of uræmatine to this substance, from the supposition that it is "derived from the pigment of the blood or haematin." In a dry state it is of a deep red color, and it is this substance which communicates to urines their various tints. Scherer supposes that it is derived from the decomposition of blood corpuscles. It is composed chiefly of carbon. But little is known at present of its exact character—its derivation, chemical reactions, &c.; but it is doubtless an effete and excrementitious substance.

FIXED SALTS OF THE URINE.—Sulphates. Of the fixed salts of the urine the sulphates of potassa and soda are the most abundant. The average quantities of each in 1000 parts of urine are as follows, according to Berzelius: sulphate of potassa, 3·71; sulphate of soda, 3·16. A small quantity of pure sulphur is also present in most healthy urines. They are derived in part from the metamorphoses of the tissues.

Phosphates.—Berzelius gives us the following proportions of these salts as pertaining to normal urine: phosphate of soda, 2·94, and phosphate of ammonia, 1·65, in 1000 parts of urine. Traces of phosphates of lime and magnesia are also always present in normal urine. Free phosphorus is said to be a constant constituent of healthy urine. Derived chiefly from disintegrated muscular, brain, and nervous tissues, and from food and drinks. Increased by mental activity and cerebral irritation.

Chlorides.—These occur in normal urines in the form of chloride of sodium and potassium—the proportion of the former to 1000 parts of water being 4·45, and of the latter a trace.

Minute quantities of the following substances are likewise found in all normal urines: silica, free lactic acid, fluoride of calcium, hydrochlorate of ammonia, acetate of ammonia, albumine, gelatine, and benzoic acid.

2. BRIGHT'S DISEASE OF THE KIDNEY.

SYNONYMS.—*Albuminuria.*—*Acute desquamative nephritis.* (Johnson.)—*Renal cachexia.* (Wood).—*Albuminous nephritis.*—*Granular degeneration of the kidneys.*—*Fatty degeneration of the kidneys.*—*Uremia.*

In 1837 the attention of the medical public was first seriously directed to this malady by Dr. Bright, of London. Although a few previous

writers had vaguely alluded to the disease, and thrown out some hints with regard to its probable nature, yet to Dr. Bright belongs the credit of having first presented to the profession a systematic and moderately accurate description of the symptomatic and pathological phenomena of the disease. We adhere to the term "Bright's disease" to designate the malady, because not one of the other names applied to it conveys a just impression of its actual nature. The prime cause, the ultimate essence of the malady is not located in the kidneys, but in the blood itself, in the form of retained effete matter from diseases, from the presence of noxious drugs, from checked perspiration, &c. So long as these poisons remain in the blood, its normal condition is disturbed, and the entire organism suffers. Nature, always kindly in her instincts, always on the *qui vive* to sustain the integrity of the delicate organization over which she has been placed in charge by the Great Architect, strives to eliminate all disturbing agents through one or more of the natural emunctories of the body; and she always selects the most appropriate channels to throw off each deleterious substance. As examples we cite the following:

When the poison of variola has infected the blood, the skin is selected as the eliminator, and the energies of the system are concentrated to throw out upon this part, suppurating pustules loaded with the escaping poison of small-pox. The copious discharges from the pocks usually suffice to relieve the blood of its morbid constituent, and thus enable the system to return to a normal state. But in some instances the pustules fail to perform their full duties as eliminators, the kidneys are called into requisition as auxiliaries, and, as a consequence, renal inflammation is sometimes the result.

In the case of scarlatina poison, the most important eliminators are the skin and the mucous membrane of the throat and intestinal canal. When the poison is intense, and the natural recuperative forces are feeble, these parts fail to perform their offices efficiently, and an extra amount of labor devolves upon the kidneys. During the passage of this poison through the *tubuli uriniferi*, an inflammatory congestion is produced, which prevents the Malpighian corpuscles and the epithelial cells of the tubes from separating from the blood normal urine, and permits the passage of albumen, fibrin, and other abnormal constituents.

In measles, erysipelas, and other cutaneous disorders similar conditions not unfrequently obtain. So likewise in many other conditions of the system; in scrofula, psora, constitutional syphilis, the presence in the blood of poisonous substances, like mercury, phosphorus, turpentine, copaiba, and other drugs, retained perspiration from the action of cold, &c., the kidneys may become inflamed in their efforts to eliminate these noxious influences. During this process of elimination, if the

poison is directed towards the skin, eruptions and cutaneous inflammations of various kinds may result; if it is attracted to the bowels a diarrhoea will occur; if to the liver, hepatic inflammation will ensue; if it passes out of the blood through the kidneys, we shall have the usual phenomena of acute desquamative nephritis, with a rapid production and detachment of the epithelial cells of the convoluted tubes, inflammation of the Malpighian bodies, exudation of serum, fibrin, &c.

When renal inflammation results from any of the causes cited, it can only be regarded as an effect of the action of the passing irritant. To this effect medical men at present direct their chief attention, almost regardless of the more deep-seated and vital derangements which originate the complaint. In a therapeutical point of view the distinction we have described is important in guiding the medical man to a more comprehensive and efficient mode of treatment.

Bright's disease may originate from other causes than those enumerated. In our own practice we have on several occasions met with both acute and chronic forms of the malady, which were clearly traceable to irritable bladder, and other chronic affections of this organ. In several of these instances incontinence of urine (especially nocturnal) had existed for years previously to the renal attacks. It is highly probable that long-continued sympathetic irritation of the kidneys from urethral strictures, cystic calculi, and other causes of similar character, may eventually give rise to the complaint under certain circumstances. In a monograph recently published in Paris, entitled "La Fievre Jaune de La Nouvelle-Orleans," by our friend A. J. F. Cartier, M. D., it is stated that albumen is often found in the urines of yellow-fever patients, during the second and third stages of the malady. Dr. Cartier has personally verified this statement in several instances. Does not this fact go far to prove that the immediate cause of yellow fever is a *blood-poison*, introduced from without, the tendency of which is to produce a rapid decomposition of the blood, with consequent functional derangement of nearly all the organs, and finally exudation of serum into the stomach, black vomit, general prostration and death, unless the poison be eliminated during the first stage of the malady, through the pores, the kidneys, and other emunctories? A confirmation of this view consists in the fact, that when the cutaneous, renal and hepatic secretions are kept in uniform and steady action from the outset of the disease, recovery invariably results.

Albuminous urine has often been detected in cases of cholera as phyxia, and in ship, hospital and other typhoid fevers. In these examples, as in the cutaneous maladies enumerated, the blood is contaminated with specific morbid poisons, and during the reaction of the vital force to eliminate them, the kidneys become inflamed.

One of the most common and characteristic phenomena connected

with Bright's disease consists in the presence of albumen in the urine; and from this circumstance it has received, from Martin Solon, the appellation of *albuminuria*. A symptom no less common, consists in the retention of urea in the blood; from which fact other writers have employed the word *uræmia* to designate the malady. Others still regard the complaint as dependent not only upon a depraved condition of the blood, but of the entire organism; and, in accordance with this view, Professor Wood, of Philadelphia, has presented us with the term *renal cachexia*, to express the disease as a unit. Another constant phenomenon connected with the disorder is a more or less rapid production and detachment of the epithelial cells of the *tubuli uriniferi*; in consequence of which Dr. Johnson has named it *desquamative nephritis*. From the uniform presence of albumen in the urine Rayer employs the term *albuminous nephritis*. One form of the disease superinduces granular formations in the kidneys, from which the designation *granular degeneration of the kidneys* is derived by Dr. Christison. Another variety appears to be connected with waxy deposits, and these circumstances have given rise to the terms *fatty* and *waxy degeneration of the kidneys*.

When we reflect that the kidneys are effected only *secondarily*, and that all of the conditions we have cited are only isolated symptoms of quite different primary and deep-seated causes, we shall perceive that not one of the terms which have hitherto been employed to express the malady as a unit is strictly appropriate. For this reason, and until a more just and comprehensive appellation shall be devised, we shall still adhere to the original designation of *Bright's disease*.

A majority of authors have made a general division of the malady into the *acute* and *chronic* forms. This general arrangement we shall adopt in the present article, although we agree with Valleix "that it is impossible to say, precisely, what are the symptoms which correspond particularly to the three *forms* admitted by Bright, or to the *three degrees* of Christison, or to the *five varieties* of Martin Solon, or rather all of the symptoms of the malady corresponding indifferently to these forms, to these degrees, to these varieties." A single division has a real importance in pathology, like that which has been established by M. Rayer. This author has described an *acute* and a *chronic* albuminous nephritis. The first corresponds to the two first of the six anatomical forms admitted by M. Rayer, and the second to the four last.—*Guide du Medicin Practicien*, par F. S. P. Valleix, p. 100.

ACUTE FORM.—*Acute desquamative nephritis* is the appellation given to this affection by Dr. George Johnson of London. The convoluted tubules which compose the cortical portion of the kidneys are primarily and chiefly involved in this form of the disease, although the Malpighian corpuscles and the entire gland ultimately become con-

gested and somewhat enlarged. The most notable results of this inflammatory congestion are: albuminous urine, retention of urea in the blood, and dropsical effusions.

SYMPOTMS OF THE DISEASE.—Rigors or chilliness, followed by febrile reaction; hot and dry skin, rapid and full pulse, thirst, dryness of the mouth and throat; pain in the region of the kidneys, often extending to the groins, thighs, penis, and testicles, and tenderness of the kidneys on pressure; irritation at the neck of the bladder, and sometimes at the extremity of the urethra, giving rise to frequent desire to urinate, especially during the night; scanty, red, or smoky urine; loss of appetite, nausea, and sometimes vomiting, with other symptoms of gastric disturbance; dull or acute pains in the head and limbs; restlessness and lassitude. These phenomena are speedily succeeded by puffiness of the eye-lids and face, oedematous swellings of the body and limbs, and dropsical effusions into the serous cavities, more or less extensive.

The pleura is exceedingly prone to become involved in the morbid action and to throw into its cavity undue quantities of serum, in consequence of which we often observe distressing paroxysms of rapid and difficult respiration, and palpitation of the heart from the slightest exertion. In all forms of the complaint these paroxysms are quite apt to recur at regular periods—usually every evening and night, and to continue for several hours with distressing severity.

Urine.—Much diminished in quantity and sometimes almost entirely suppressed, usually red, from admixture with blood, or cloudy and turbid, of a specific gravity from 1,016 to 1,025. If the urine be placed in a watch-glass and slowly heated by a spirit lamp to the boiling point, an albuminous precipitate will be discovered; or, if a few drops of nitric-acid be carefully added to a small quantity of urine, the albuminous cloud appears and is soon precipitated. When both of these tests develop the precipitate, we may safely count on the presence of albumen in the urine.

Under the microscope, the urinary sediment reveals coagulated fibrin, "epithelial casts," epithelial cells, blood globules, and fibrinous casts from the inflamed urinary tubes. After the disease has continued for two or three weeks, Dr. Johnson has sometimes observed oil-globules in the epithelial cells and on the surface of the epithelial casts. These appearances do not appear to be connected with fatty degeneration of the kidneys, and is deemed amenable to remedial measures, provided the oil-globules are in small quantities compared with the epithelial casts. Johnson asserts that this condition is far more common in adults than in children. Not unfrequently uric-acid crystals are observed in these urinary sediments, but they do not occur with sufficient uniformity to be regarded as peculiar to the disease.

The above symptoms, if promptly met with suitable remedies, may terminate in complete resolution and a restoration of the organs to a normal condition, or they may partially subside into a sub-acute inflammatory condition, which may eventuate in one of the chronic forms of the malady; or, if the acute symptoms continue to progress unchecked until a certain amount of urea has accumulated in the blood, chronic poisoning will ensue, and drowsiness, headache, general failure of mental and physical power, stupor, and convulsions will terminate life.

MORBID ANATOMY.—If a section of the kidney be made, it will be found somewhat enlarged, heavier than natural, soft, congested and bloody. The cortical portion is infiltrated with a dark, turbid fluid, and the blood-vessels are distended with a still darker fluid. Other dark spots from ecchymoses are observed in the tissue of the gland. (*Rokitansky.*) The cortical substance is usually thickened to the amount of half an inch. (*Rayer.*) The pyramids are also involved and their blood-vessels are distended with dark blood. The natural dark-red color of the healthy organ is changed to a still deeper hue, and is dotted throughout its substance with the congested and dark Malpighian bodies. The convoluted tubuli are distended with detached epithelial cells, and are abnormally opaque. The fascia propria and the mucous membrane of the calices and pelvis are thickened, and their vessels injected with a brownish-red blood.

CAUSES.—By far the most frequent direct cause of the affection consists in the passage through the Malpighian corpuscles and the secreting tubes of the cortex, of effete and excrementitious matters derived from the blood. In the present state of knowledge it is impossible to determine the number of diseases which are caused or are connected with deterioration or contamination of the blood, and which give rise secondarily to renal affections during the efforts of the recuperative forces to eliminate them through the urinary organs. It is highly probable, however, that many more maladies than have hitherto been enumerated may safely be added to the list.

Retained effete matters from checked perspiration, whether arising from exposure to cold or from other causes, is a common cause of acute nephritis.

A less frequent, but by no means an uncommon cause of the disease, may be found in the elimination from the blood of poisonous drugs which have been administered by old-school physicians. Nearly all the resinous diuretics, like *Copaibæ*, *Turpentine*, and *Cubebæ*, as well as most other diuretics, like *Nitrate* and *Hydriodate of Potassæ*, *Digitalis*, *Apocynum-cannabinum*, *Petroleum*, *Cantharides*, and the like, are capable of producing so much irritation in their passage through the secretory tubes of the kidneys, even in small quantities, as to produce albuminous urine. A similar effect has been observed from the elimina-

tion of Mercury, Arsenic, and other mineral substances from the blood.

The abuse of alcoholic liquors, particularly those which are adulterated, is mentioned as a cause of the disorder.

Long-continued inflammation of the neck of the bladder, from stricture, enlarged prostate, calculi, &c., occasionally tend to develop albuminous nephritis from sympathetic irritation. Several cases of this description have fallen under our own observation.

Mechanical injuries over the renal region may superinduce this variety of nephritis in scrofulous, syphilitic, gouty, and other subjects predisposed to the complaint.

PROGNOSIS.—In forming an opinion respecting the probable result of acute albuminous nephritis, it is necessary to regard the actual condition of the patient and the nature of the exciting cause. When it occurs in healthy persons, and is dependent on exposure to cold, or humidity, or abuse of spirituous liquors, diuretics or other drugs, or the elimination of effete matters during the later periods of mild diseases, we may generally count on a favorable issue, provided suitable remedial measures have been promptly adopted.

But when it appears as a sequence to malignant scarlatina, erysipelas, typhus, yellow fever, or cholera-asphyxia, and the system of the patient is much contaminated and reduced from previous disease, the prognosis must always be regarded as doubtful, and often positively unfavorable.

A scrofulous, psoric or gouty diathesis, constitutional syphilis, and cancerous, mercurial and arsenical cachexias are always unfavorable concomitants in this affection.

CHRONIC FORMS OF BRIGHT'S DISEASE.—Many attempts have been made to group together certain phenomena, and to classify them as characteristic indicators of the various forms of Bright's disease. Pathology, chemistry, and microscopy have all been called into requisition as aids in determining this classification, but the subject is still involved in much doubt and confusion. Many eminent continental physicians, like Frerichs and Reinhardt, regard the different forms of the disease as successive stages of one primary inflammatory congestion; the first link in the chain being *inflammatory congestion*, the second *inflammatory exudation*, and the third *absorption*. English and American writers for the most part recognize the existence of these stages, but deny that they have any necessary connection with each other. They assert that each of these forms is often met with as an independent malady, and without any previously existing acute disease either in the kidneys or elsewhere. This argument, however, loses its force when we reflect that acute desquamative nephritis sometimes

runs its course with symptoms so mild as scarcely to attract attention. Thus a cold, with slight febrile symptoms, high-colored urine, and tenderness and pain in the lumbar region may occur repeatedly without exciting a suspicion of kidney disorder; and yet these very symptoms may be dependent on inflammatory congestion of the kidneys. It is so common a circumstance for patients to be troubled with what is vulgarly termed "crick in the back" during the existence of severe colds, that nearly all pains in this region are included under this general appellation, and are passed by unheeded. In this manner the first stage of Bright's disease often remains undiagnosed, and the more chronic stage of exudation gradually and insidiously establishes itself. How few there are who cannot recall one or more attacks of cold, with febrile reaction, scanty and red urine, nausea, and pain in the loins; and yet one of these unheeded attacks may constitute the first stage of this formidable disorder.

In several instances we have met with chronic albuminuria in individuals who were confident that they had never suffered from any affection of the kidneys; but who, after minute examination and careful reflection, have been able to call to mind previous attacks similar in character to acute desquamative nephritis. Adopting the views of Frerichs and Reinhardt, we proceed to describe—

THE SECOND STAGE OF BRIGHT'S DISEASE.—Upon the supposition that all forms of chronic Bright's disease have been preceded by one or more inflammations of the cortical substance of the kidneys, we submit the following additional remarks:

It is a well-established fact that many serious chronic maladies are but sequences, more or less remote, of previous acute inflammations. Thus many cases of uterine displacements, fibrinous depositions upon the utero-genital structure, hypertrophies of mouth and neck of the uterus, and chronic ovarian disorders are distinctly traceable to previous inflammatory conditions of these tissues. These inflammations, either from negligence on the parts of patients, or insufficient medical treatment, are only partially subdued, and are allowed to subside into sub-acute or chronic states, and thus to remain as nuclei for the action of any future morbid exciting causes. One of the most common results of all acute inflammations is an exudation into, or upon the affected tissue, with a consequent thickening or hypertrophy. This may super-induce morbid irritations; or it may continue to exist for months or years almost unnoticed, when perhaps, some additional exciting cause will develop a new and more serious train of symptoms.

A pneumonia may run through its course and leave the patient well, with the exception of one or more points of hepatization. A future exciting cause, perhaps years afterwards, may develop in the affected parts softening and consumption. The first inflammation sows the

seeds, and a later exciting cause germinates them into a fatal chronic degeneration.

So in the nephritic disorder, a primary inflammation, but partially subdued, leaves the renal tissue thickened and obstructed by an exuded foreign substance; and the organ is placed in a condition to become readily affected by any future noxious influence that may be brought to bear upon it. This renal infiltration may be gradually and imperceptibly absorbed, or it may remain stationary for a long period without producing any serious inconvenience, or a second acute inflammation may be re-established, or the future elimination of some deleterious substance from the blood through the oppressed gland may develop one of the chronic forms of renal degeneration. The kind of degeneration will be determined by the nature of the exciting cause, and the constitutional and acquired peculiarities of each case—some constitutions favoring the development of granulations, some fatty degenerations, others waxy or scrofulous degenerations, &c.

Treatment of Acute Desquamative Nephritis, or the First Stage of Bright's Disease.

ACONITE.—Symptoms. Chilliness, followed by general heat, rapid and full pulse, thirst, dry skin and tongue, nausea, vomiting, loss of appetite, general restlessness; pains in the head, back, and limbs; pains in the loins; sensitiveness in the renal region; numbness in the small of the back, extending as far as the lower limbs; restless and sleepless during the night; scanty, bright-red, hot urine without sediment; urine very scanty and turbid; retention of urine, with pressure in the bladder, or stitches in the region of the kidneys; enuresis, sometimes accompanied with profuse sweat, with diarrhoea and colic; face red or pale, and puffy.

Gastric and Abdominal Phenomena.—Pressure in the stomach and hypochondria, accompanied with paroxysms of shortness of breath, and even asthmatic symptoms; nausea and inclination to vomit—especially in the pit of the stomach; vomiting, with nausea, thirst, general heat, profuse sweat, and enuresis; inflammation of the bowels; peritonitis; the abdomen swollen and distended as in dropsy; ascites; diarrhoea, with enuresis and colic.

Pneumonic and Pleuritic Phenomena.—Shortness of breath, especially when sleeping, after midnight, or when rising from the recumbent posture; paroxysms of suffocation, with anxiety, and aggravation of all the sufferings in the evening; asthmatic complaints; pneumonia and pleuritis in their first stages, with active febrile symptoms.

Cardiac Phenomena.—Palpitation of the heart, with great anguish and difficult respiration; carditis; palpitation of the heart, with oppressive aching in the cardiac region.

Cerebral Phenomena.—Fullness and pressure in the head; head-

aches—stinging, beating, or lancinating, or contractive, with dullness of the intellect, and, finally, convulsions or coma.

All of the symptoms are worse in the evening; pains particularly intolerable at night, and disappear for the most part when sitting; many of the symptoms appear in the evening, or early in the morning; ailments arising from colds.

PATHOLOGY.—Kidneys gorged with blood; congestion of the kidneys; face puffy and bloated; abdomen distended; effusion of yellow serum into the abdominal cavity.

CLINICAL REMARKS.—At the commencement of this malady Aconite is often a useful remedy. Its influence upon the nervous and circulatory systems, which are always more or less seriously involved, should induce us to examine it among our first remedies. Nor is it alone useful against the febrile reaction of the first days of the disorder; but it possesses strong homœopathic relations with pneumonic, pleuritic, cardiac, gastro-intestinal, cerebral, and rheumatic complications. It does not, indeed, deserve a place as a direct specific in any form of the disease; but, as a modifier and controller of many troublesome accessory symptoms of a febrile character, it will be held in high estimation. Among the symptoms which pertain to this form of the malady is a persistent dryness of the skin. There are but few remedies more homœopathic to this condition than Aconite.

AMMONIUM-CARBONICUM.—*Symptoms.* Chilliness, followed by feverish symptoms, which are especially troublesome in the evening and during the night; with nausea, pressure at the stomach and chest, eructations, thirst, restlessness, and sleeplessness; dull, bruised, or shooting pains in the region of the kidneys; pains in the loins, increased by walking; violent throbbing pain in the small of the back and loins, when at rest; drawing pain from the small of the back to the thighs; dull pain, extending from the loins and hips to the abdomen; face red and bloated, or pale and bloated; drowsiness in the daytime; weary, disturbed, and unrefreshing sleep; mind dull and confused; extreme lassitude and sense of fatigue; spasmodic twitchings in the arms, hands, and legs.

Gastric Phenomena.—Nausea, pressure at the stomach and chest, eructations, thirst; pressure at the pit of the stomach, nausea, and oppression after eating; weakness of digestion.

Thoracic Phenomena.—Dyspnoea and palpitation of the heart after every exertion; difficult breathing at night; painful oppression of the chest; pressure at the chest, with nausea, thirst, and feverish symptoms.

Cerebral and Nervous Phenomena.—Involuntary twitchings of the muscles of the arms, hands, and other parts of the body; impaired

memory; dullness of intellect; convulsions (from injection into the veins).

Urine.—Very red, turbid, and foetid; frequent urging to urinate, with scanty emission, especially at night; cloudy reddish urine mixed with blood; involuntary emissions of urine at night; urine mostly cloudy, whey-like, very ammoniacal and musty; discharge of urine leaving chalky spots; symptoms worse in the evening and in the open air.

PATHOLOGY.—The morbid changes which this substance produces in the kidneys have not as yet been investigated. Seybert asserts that it operates specifically upon the capsules of the kidneys. From the renal pains, and the marked changes of the urine, which have been observed during its exhibition, it may be inferred that it also acts specifically upon the kidneys themselves. Under its use the body becomes much emaciated, and the muscles soft and flabby.

CLINICAL REMARKS.—This remedy is indicated after the febrile symptoms have somewhat subsided, and symptoms of uræmic blood-poisoning obtain. Among the symptoms which particularly point to **Ammonia** are the following: pale and bloated face; extreme lassitude; mind dull and stupid; dull pains in the loins; frequent and scanty urination; urine red and turbid, or light and cloudy; gastric disorders; dyspnoëa, oppression of the chest, and palpitation of the heart after exertion; involuntary twitchings of the muscles; convulsions; coma.

APIS-MELLIFICA.—*Symptoms.* Edematous swellings of the face and extremities; paleness of the face; face red and swollen; febrile symptoms, with headache, pain in the loins, gastric derangement, hurried and difficult respiration; pain and soreness in the region of the kidneys on pressure or on stooping; constant dull pains in both kidneys, with a very small secretion of red urine; short, rapid, and anxious breathing at night; difficult and anxious respiration; repeated micturition every few minutes; frequent and painful urging to urinate, with scanty discharges of urine mixed with blood; burning in the urethra before and after micturition; frequent and copious discharges of urine.

PATHOLOGY.—From its marked effect upon the quantity and quality of the urinary secretion, and the renal pains to which it gives rise, we infer that it operates specifically upon the kidneys, and produces morbid alterations in them analogous to those of inflammation and congestion. At present we are not in possession of any pathological facts with reference to its action upon the kidneys, and must therefore content ourselves with inferences derived from pathogenetic and therapeutic observations.

CLINICAL REMARKS.—We have employed this medicine with benefit

in all forms of Bright's kidney. In the acute variety we regard the following phenomena as especially indicative of *Apis*: moderate febrile symptoms, with pains in the head, back, limbs; thirst; restlessness; nausea; short, rapid, difficult, and anxious respiration; oedematous swellings of the face and extremities; ascites; *œdema pulmonalis*; hydrocephalus; frequent urination, with small, red, and turbid discharges.

Against albuminuria following scarlatina it is one of our most important and frequently-indicated remedies.

Drs. Madden, Munger, and Barker have reported a number of cases of post-scarlatinal dropsies, with albuminous urine, cured with the third dilution.

We have been informed by Dr. B. F. Joslin, Sr., that he has cured two cases of acute albuminous nephritis with *Apis*: one in a man thirty-five years of age, which supervened during convalescence from a typhoid fever; and the other in a girl of six or seven years of age, which probably originated from a cold. The treatment in both instances was commenced with pellets saturated with the tincture, followed by the sixth, then the twelfth, and, finally, thirtieth dilution. The best effects followed the use of the last-named attenuation.

APOCYNUM-CANNABINUM.—*Symptoms.* Slight fever, with thirst, dry mouth and tongue, headache, nausea, dull pains in the region of the kidneys and in the legs, flatulent distention of the bowels, diarrhoea, restlessness, scanty urine, rapid and oppressed respiration.

PATHOLOGY.—All admit the specific action of this drug upon the kidneys, but we are not in possession of any facts which enable us to determine the kind of morbid alteration which it produces. But, from the few pathogenetic symptoms which have been published, we infer that it gives rise to an inflammatory congestion of the secreting tubules of the cortex.

CLINICAL REMARKS.—At an early period of the malady, before the epithelial linings of the *tubuli uriniferi* have become extensively injured and detached from the basement membranes, this medicine may be prescribed with advantage. Its specific impression under such circumstances, both upon the blood and upon the renal tubules, may be of such a character as to arrest the further progress of the disease in some instances. By some its influence is supposed to be purely mechanical—stimulating the tubules to an augmented secretion, and thus relieving the system of any existing excess of serum; but it is by no means improbable that future provers may experience dynamic effects having important homœopathic relations to the more interior and vital phenomena of Bright's disease.

Several physicians have alluded to its efficiency in removing dropical effusions consequent upon acute and chronic albuminuria; and in

some instances where the renal attack is slight, and the epithelium is not much impaired, it will accomplish all that is claimed for it by these gentlemen.

ARSENICUM-ALBUM.—*Symptoms.* Chilliness, followed by dry heat of skin, thirst, headache, backache, great restlessness, violent pains of oppression and burning in the stomach, nausea; short, rapid, and difficult respiration; œdema of the face and ankles; languor; weakness; pain and trembling of the limbs; anxiety; confusion of ideas; vertigo; yellow, red, or livid countenance; general feeling of *malaise*; congestion of the kidneys; frequent desire to urinate; scanty, red, dense, albuminous, and bloody urine; general anasarca.

Gastro-Intestinal Phenomena.—Nausea, retching, vomiting; severe pains in the stomach and pit of the stomach—burning, or pressing, or spasmodic, or gnawing, or tearing, worse after eating and on pressure; distention of the stomach; abdomen distended; spasmodic, or cutting, or burning pains in the abdomen, with heat, thirst, and looseness of the bowels; flatulent distention of the abdomen; ascites; diarrhoea, with frequent and painful micturition.

Pulmonary and Cardiac Phenomena.—Suffocative oppression and arrest of breathing at night, or in the evening in bed; anxious and oppressive shortness of breath on walking, or on making any exertion; shortness of breath and short hacking cough, increased by exercise and worse at night; palpitation of the heart, particularly at night; pulsations irregular, with anguish and oppression of the chest; dropsy of the chest, with its usual concomitant symptoms.

Cerebral and Nervous Phenomena.—Fits of anguish, with great weakness and tremulousness of the body; involuntary spasmodic twitchings of various parts of the body; trembling of the limbs; general loss of strength; tetanic spasms; epileptic convulsions; coma.

Urine.—Congestion of the kidneys; urine scanty, high-colored, dense, albuminous, depositing blood-disks and casts of uriniferous tubes of the kidneys, and death from tetanic spasms (*Jackson, of Edinburgh*). Frequent painful and difficult micturition; urinary secretion diminished; suppression of urine (*Christison*). Urine scanty, acid, and high-colored; renal colic extending towards the bladder, and then vesical tenesmus; urine sometimes increased and sometimes diminished; frequent urging to urinate, compelling him to rise during the night; involuntary micturition, even at night during sleep; diminished discharge of red urine, with burning; urine turbid, dark brown, and depositing a slimy sediment.

PATHOLOGY.—Kidneys enlarged and congested; kidneys look like tallow; thick, turbid, purulent urine in the pelvis of the kidneys; in experiments on cats Dr. Quaglio found in the bladder greenish yellow urine containing a large amount of albumen, fat-globules, and debris

of the epithelium of the urinary tubes; reaction neutral-urea, uric acid and chloride of soda notably less; kidneys double the natural size, greatly congested, especially the cortical portion which was brown-red, hard, and augmented in diameter; the cut surface exuded a red and viscid liquor. The Malpighian bodies were streaked with red and congested; the glandules filled with blood; the tubes of Bellini filled with fibrinous clots, dotted with sanguineous globules. Other samples of urine contained cylinders of fibrine, fat-globules, and albumen; diminution of urates, renal capsule slightly adherent, cortical substance yellow and friable, fibrinous exudations and fat-globules issuing from the openings of the canalliculi, their epithelium altered and filled with fat. In another case, the kidneys were enlarged, slightly hardened, but with a smooth and glossy surface; many tubes of the Malpighian pyramids filled with fibrin. In another case, the urine in the bladder was clear and yellow, containing fat-globules; crystals of uric acid and oxalates and the debris of epithelium of Bellini's tubes. In the kidneys, whose capsules were easily detached, there was the same fatty degeneration of the epithelium; other tubes were deprived of their epithelium; the greater part of the canalliculi were enlarged in such a manner as to form granulations upon the surface of the kidneys." (*Experiments of Dr. Quaglio, on cats, with Arsenite of Potassæ, see North Am. Hom. Jour., No. XXVII, p. 660.*)

CLINICAL REMARKS.—Arsenicum appears to correspond in a remarkable manner to several stages of Bright's disease. Its pathogenetic and pathological phenomena probably bear a closer resemblance to the symptoms and morbid appearances of Bright's kidney, than those of any other medicine. In its action upon the convoluted tubes of the cortex, it actually gives rise to inflammatory congestion, a detachment of epithelium, depositions of fatty and oily matter in the epithelial cells of the convoluted tubes of the cortex, it actually gives rise to inflammatory congestion, a detachment of epithelium, depositions of fatty and oily matter in the epithelial cells of the convoluted tubes, and to so much derangement of function as to lead to a retention in the blood of urea, uric-acid, and other proper salts of urine, and to the escape of albumen from the blood, through the Malpighian bodies into the urinary tubes and bladder.

There is likewise an equally remarkable analogy between many of the secondary and constitutional symptoms of Bright's disease and those of Arsenicum. Both superinduce general anasarca, ascites, hydrothorax. Both produce inflammation of the pericardium, and of the structures of the heart, with their accompanying disturbances. Both cause general emaciation, pallor of the skin, and a gradual diminution of vital force. Both induce inflammation of the meninges of the brain, effusions of serum into the ventricles, spasms, convulsions, coma.

In view of this intimate homœopathic relation between this drug and acute Bright's kidney, we have prescribed it in several instances, after the employment of Aconite, and usually with marked success. We have used the third, sixth, twelfth, and thirtieth dilutions, and have witnessed prompt and unequivocally good results from all of them. And when we remember how extensively the minute capillary apparatus of the renal structures are implicated in the acute form of the malady, and how essential it is that the atoms of the remedy should bear directly upon these infinitesimally small vessels, we shall not wonder that *minute* atoms penetrate farther, and operate more beneficially than *crude* atoms of the same medicine.

ASPARAGUS-OFFICINALIS.—*Symptoms.*—Moderate febrile reaction, with a sense of fatigue and somnolence, especially at about three o'clock, P. M.; general increase of heat with slightly accelerated pulse; rapid and irregular pulsations of the heart especially on exercising; slight pains in the kidneys during the afternoon; pains in the kidneys just under the false ribs; frequent and painful micturition; urine scanty, brown and without sediment; frequent desire to urinate; hæmaturia; urine limpid and exhaling an odor *sui-generis*; yawning and somnolency; symptoms worse from motion.

PATHOLOGY.—We are not aware that any observations have ever been reported touching the morbid alterations of the kidneys induced by this medicine. From the pathogenesis, it may be inferred that its action upon the convoluted tubes is only slight and transient.

CLINICAL REMARKS.—This remedy may sometimes be indicated, after the more acute symptoms have been subdued by Aconite, Mercurius, Kali, Arsenicum, and other potent remedies. When the urine is still scanty, and slightly dark, and the patient is restless and hot in the afternoon and evening, with lassitude, somnolence, and slight pains in the renal region on moving about, a few doses of the third dilution will be likely to prove beneficial.

CANNABIS-INDICA.—In the cerebral complications which so often accompany this malady, whether in the form of ocular illusions, wandering, or partial delirium, mental obtuseness, or exhilaration, spasmodic twitchings, or actual convulsions, this is one of our most important remedies. I have recently witnessed a most excellent cure of an apparently almost hopeless case of uræmic convulsions (post scarlatinal) with this remedy. Under the persistent use of the remedy at the first dilution, for four days, the convulsions gradually ceased, the urine became abundant and natural in color—having lost all the traces of albumen, blood-globules, and other abnormal appearances.

We regard Cannabis-indica as the most valuable of all other medicines in the convulsions consequent on this disease.

COPAIVÆ-BALSAMUM.—*Symptoms.*—Chilliness in the forenoon, fol-

lowed by febrile symptoms in the afternoon; dull and sometimes spasmodic pains in the lumbar region; gastric derangement; nausea, vomiting, bitter taste, burning pain in the stomach, colic, diarrhoea; difficult respiration and palpitation of the heart on making any exertion; diurnal somnolence; vertigo; dull pain in the head; spasmodic attacks in various parts of the body; pale and sickly appearance; frequent desire to urinate; urine scanty and passed drop by drop; retention of urine; burning pain on urinating; foaming urine; balsamic or violet odor to the urine; general languor and uneasiness; involuntary trembling, and moving the extremities, head and trunk.

PATHOLOGY.—Albumen has occasionally been detected in the urines of patients who have been under the influence of Balsam-copaivæ for a considerable period. And, simultaneously with this appearance of albumen, there has usually been a diminution of the proper salts of the urine. From these circumstances it is reasonable to suppose that the medicine operates specifically upon the epithelial cells of the *tubuli uriniferi*, and, perhaps, the Malpighian bodies, producing in them a kind of inflammatory congestion.

CLINICAL REMARKS.—It would seem to be homœopathic to those cases of post-scarlatinal dropsies occurring after an imperfect development, or an abrupt repulsion of the rash. Its well-known action upon the skin in developing an eruption similar in appearance to that of scarlatina, affords an additional circumstance in its favor as a remedy in these cases.

CANNABIS-SATIVA.—*Symptoms.*—Chills, fever, violent thirst; drinking causes tremor, shaking, coldness of the hands, knees, and feet, and distortion of the face; diurnal somnolence; disturbed nocturnal sleep; dull, lancinating pains—slow and intermitting—in the left side of the back, under the last rib; pulling pain in the renal region, extending to the inguinal glands, with sensation of *malaise* at the pit of the stomach; obtuseness of mind; impaired memory; confusion of ideas; pain and congested feeling in the head; great weariness and weakness; nausea, vomiting; pains and spasmodic pressure in the stomach; tetanic spasms of the upper limb and trunk; frequent desire to urinate, with tenesmus, sometimes accompanied with burning pains; urine red and turbid; urine filamentous, as if mixed with pus; painful and scanty discharge of bloody urine.

PATHOLOGY.—Pus in the left kidney, not far below the pelvis.

CLINICAL REMARKS.—Cannabis will often be found useful in cases, which have been preceded by irritation of the neck of the bladder, irritable bladder, strictures, &c. It is highly probable that the secreting tubes of the kidneys occasionally become inflamed and congested in consequence of long-continued and severe irritation in the bladder; and

it is in such cases that Cannabis, Cantharides, Apis, and the like, will be likely to cover the totality of the symptoms.

Our experience with this class of remedies, in the malady under consideration, is in favor of the third dilution and upwards.

CANTHARIS-VESICATORUM.—*Symptoms.*—Chilliness, followed by fever, with headache, pains in the back and limbs, thirst, dryness of the mouth, anxiety, frequent pulse, scanty and red urine; face red, animated, hot, and burning; face and neck swollen, and eyes prominent; face pale or yellowish, thin and sickly; lips peeled, tongue denuded of epithelium, soft palate, of a deep-brown color; lips, tongue, and pharynx covered with vesicles; ptyalism; delirium; loss of consciousness; great forgetfulness; dozing, semi-stupid mood, indifference to surrounding objects; headache, vertigo, sensation of weight in the head, sensation of numbness and pressure in the head; tearing, lancinating, and burning pains in different parts of the head; dull, pressive, lancinating, or burning pains in the kidneys, sometimes extending to the abdomen and thighs, and accompanied with urethra and hypogastrium; inflammation of the kidneys; nephritis and hæmaturia; general dropsy; anasarca; anasarca and ascites; attacks of convulsions; frequent convulsive movements; intense headache and chills, convulsions and coma; convulsive movements, cold sweat, agony, and death; frightful convulsions and death at the end of two days, (the *post-mortem* revealed deep ulcerations of the stomach, intestines, kidneys and bladder); gastric derangement, nausea, vomiting, pains of a burning, contractive, pressing, or lancinating character in the stomach; flatulent distention of the stomach and bowels; acute, burning pains in the umbilical region; colic, followed by diarrhoea; violent diarrhoea, with persistent burning pain at the anus; laborious respiration; accelerated and difficult respiration; spasmodic cough; palpitation of the heart; frequent desire to urinate, with vesical pain; strangury; urine bloody and passing off drop by drop; urine scanty and dark; urine very red and covered with a black pellicle; urine bloody, small in quantity, and vesical tenesmus; suppression of urine; retention of urine, with great desire to urinate; retention of urine in cholera; hæmaturia; general weakness; heat and sense of excoriation in all the cavities of the body.

PATHOLOGY.—Redness of the medullary substance of the kidneys; redness of the pelvis of the kidneys and of the ureters; ulceration of the kidneys; suppuration of the kidneys; kidneys red and inflamed; vivid redness of the medullary substance.

CLINICAL REMARKS.—Like Cannabis, this remedy is especially appropriate in nephritic affections which have been preceded, or which are accompanied by cystic or urethral inflammation. We have already observed, that Bright's disease is not unfrequently preceded and accompanied by strictures of the urethra, irritable bladder, and irritation

of the neck of the bladder; and that these maladies occasionally operate as exciting causes of the former affection. As a general rule, Aconite may precede this medicine with advantage to subdue the more acute symptoms; after which Cantharis may often be consulted with benefit. By referring to the above pathogenesis, it will be observed that it possesses many phenomena pertaining to each form of albuminuria. Renal pains, scanty and high-colored urine, frequent micturition, and general excitement of the vascular and nervous systems, indicate its applicability in acute nephritis; while paleness and puffiness of the face, anasarca, dropsical effusions, dozing, semi-stupid mood, short and difficult respiration, palpitation of the heart, gastro-intestinal derangements, great debility and lassitude, spasmodic twitchings, convulsions, and coma point to it as a remedy in many groups pertaining to the chronic forms of the disease.

We were formerly in the habit of employing the first or second dilution in water in these cases, but an enlarged experience has demonstrated the superiority of the more attenuated preparations of the drug.

DIGITALIS-PURPUREA.—*Symptoms.*—Febrile symptoms slight; feverish shiverings, alternating with transient flushes of heat, accelerated pulse, and moderate tendency to perspiration; anasarca; general dropsy; general paleness of the skin; pale face; swelling of the cheeks and lips; general weakness; swelling of the feet in the day time, going off at night.

Renal Phenomena.—Bruised pain in the region of the kidneys when stooping or moving about; tearing pains and sharp stitches in the small of the back during motion.

Gastro-Intestinal Phenomena: white coat upon the tongue; ptyalism; nausea; vomiting; burning, or lancinating, or pressing, or spasmodic pains in the stomach; great sense of weakness in the stomach; contractive, or pressing, or cutting, or pinching, or cramp-like pains in the abdomen; light-colored diarrhoeic stools; ascites.

Cardiac Phenomena: pulse frequent, (primary effect), and abnormally slow and weak, (second effect); organic affection of the heart (principally of the left side) especially hypertrophy, with or without enlargement of the left ventricle; dropsy of the pericardium; ascites and anasarca, with organic affections of the heart, after scarlet fever. Asthmatic respiration and palpitation of the heart, especially when walking.

Cerebral Phenomena: dullness of the head; difficulty in concentrating the mind; vertigo and trembling; pressing, burning, or lancinating pains in the vertex and forehead; drowsiness; lethargy; uneasy, unrefreshing sleep; sleep disturbed by frequent desire to urinate; general dullness of mind and inertia; spasms; violent convulsions: convulsive

motions and involuntary twitchings of the cheeks, and of the fingers and thumbs.

Urine: continual desire to urinate, only a little at a time, of a dark brown color, and hot and burning on passing; frequent desire to urinate during the night; excessive emission of urine day and night with great exhaustion; enuresis succeeded by retention of urine; sleep disturbed from frequent desire to urinate.

CLINICAL REMARKS.—Supposed to act best upon blondes with soft and lax muscles, or upon scrofulous subjects, or upon persons of phlegmatic or sanguine temperaments. This medicine operates specifically not only upon the kidneys, but also upon the circulation, reducing the frequency and force of the pulse, and thus diminishing undue febrile action. It is, therefore, often appropriate at the outset of acute Bright's disease, either alone, or in alternation with Aconite.

Rilliet and Barthez commend it highly in Bright's disease of children. These gentlemen report two cures of the chronic variety, in boys of eight and nine years of age. (*Maladies des Infans*, vol. 2, p. 51.) "They both took Digitalis for several days consecutively, with evident action both on the pulse and urine. The pulse considerably diminished in frequency, the urine became at the same time more copious, the anasarca disappeared, and the urine lost all traces of albumen."

These gentlemen advise the persistent use of the vapor bath in conjunction with the internal use of Digitalis. Our knowledge respecting its pathogenesis and pathology is as yet quite limited and imperfect, yet its action upon the urinary glands is so prompt and specific as to render it worthy of attention in all cases of Bright's kidney.

KALI-NITRICUM.—*Symptoms*: Violent chilliness, with trembling of the whole body; coldness in the afternoon or evening, with pain in the vertex; shuddering in the evening, followed by heat and sweat, without thirst; heat and sweat over the whole body; chilliness, heat and sweat in alternation; inflammatory conditions, with full, hard, and quick pulse.—Drowsiness; dull, heavy, pressing pains in the head; pulse reduced to sixty per minute; gastric and intestinal disturbances; foetid breath; thirst, without appetite; eructations, nausea, heartburn, vomiting; pain and pressure of the stomach; spasms of the stomach; burning, heaviness, fullness, faintness at the stomach; distention, fullness, and cutting or drawing pains in the abdomen; diarrhoea; difficult and oppressed breathing on ascending a stairs; violent palpitation of the heart, in the night, when lying on the back, or on the right side, or when moving about quickly; pain in the small of the back, in any position, continuing the whole day and night, or in the morning on waking, or in the evening, or during the night—of a bruised, or pressing, or crampy, or burning character; spasmotic, painless jerkings of the fingers, hands, and other parts of the body; sudden swelling of the

body, neck, and thighs; convulsions; symptoms worse at night in bed; diminished secretion of urine; frequent desire to urinate, which continues through the night; increase of urine, with reddish deposits, or with a mucous sediment; frequent emission of a pale, turbid urine; urine of a specific gravity of 1030 to 1040; salts of the urine greatly increased.

PATHOLOGY.—During its rapid passage through the *tubuli uriniferi*, it must of necessity stimulate them more or less, and eventually super-induce an inflammation, and probably an exudation into the renal tissue.

CLINICAL REMARKS.—Our attention was first called to this medicine as a remedy in Bright's kidney, by Dr. Warner, of Buffalo. This gentleman, and his partner, have been in the habit of employing it in suitable cases, for many years, and with highly satisfactory results. If we mistake not, these gentlemen have cured several well-marked cases of granulated kidney with the medium attenuation of this drug.

We record our experience of its decided utility in both the acute and chronic forms of the malady, when there are: distressing paroxysms of difficult and rapid respiration, occurring during the evening and night, and diminishing towards morning, considerable gastric derangement, spasmodic pains at the pit of the stomach, short, hacking cough during the night, persistent, dull, bruised pains in the renal region. In such groups, we have often observed prompt and decided improvement from the use of the thirtieth attenuation.

KALI-HYDRIODICUM.—*Symptoms:* Chilliness, with drowsiness, commencing at the lower part of the back, and extending upwards and through the body; chilliness, with dryness of the mouth and thirst, in the evening; flushes of heat, with dullness of the head and *malaise* in the body; heat, followed by sweat in the afternoon; frequent attacks of dullness and heaviness of the head; general feeling of *malaise*; oedema of the eye-lids; face pale and swollen; dyspnoea; dry, hacking cough, with oppressed breathing; pleuritis; burning pain in the pit of the stomach; restless and confused sleep; bruised pains in the small of the back, particularly troublesome at night; violent pain in the small of the back constantly; darting pains in the small of the back when sitting; nightly urination; blood-red urine; painful urging to urinate; discharge of mucus from the urethra.

PATHOLOGY.—From the fact that this drug, when taken internally, is rapidly eliminated through the kidneys, it may be inferred that it is capable of producing more or less irritation and congestion of the *tubuli uriniferi*. We know that it causes enlargement of the sub-maxillary glands, and infiltration of the surrounding cellular tissue, and it is not at all improbable that similar effects are produced upon the kidneys.

CLINICAL REMARKS.—We have found this remedy most frequently indicated towards the termination of the acute stage of the malady, after the inflammatory congestion of the renal tubes had in a great measure subsided, leaving the parts more or less thickened and infiltrated with lymph or fibrinous matters. If the case has been preceded or accompanied by rheumatism or gout, the indications for its employment will, for the most part, be still stronger. When the renal affection is dependent upon a scrofulous diathesis, or upon the presence in the system of Mercury, or of syphilitic contamination, this medicine is a remedy of much value. Like Carbonate of Ammonia, it possesses the property of preventing coagulation of blood, albumen, fibrin, and milk, and of redissolving them when coagulated.

MERCURIUS-SUBLIMATUS-CORROSIVUS.—*Symptoms.* Febrile symptoms not strongly pronounced ; irregular febrile reaction ; feeling of heat and anxiety, which prevents sleep at night ; frequent, small, quick, feeble, tremulous pulse ; slow, nervous, febrile conditions, with profuse sweats and great debility ; chilliness and colic pains on motion ; swelling and redness of the face ; coated tongue, fetid breath, ptyalism ; nausea, vomiting, violent, tearing, or burning, or pressing, or gnawing, or darting pains in the stomach ; diarrhoeic stools ; pains in the head, back, and limbs ; shortness of breath, oppression of the chest, rapid and difficult breathing, excessive dyspnoea, palpitation of the heart ; headache, drowsiness, and anxiety ; general condition of anasarca, anasarca of the face and limbs, face red and swollen ; periodical convulsive movements of the facial muscles, arms, and feet, constant trembling and spasms of the limbs, convulsions, general insensibility ; scanty red urine, which is passed with difficulty ; suppression of urine ; urine red, scanty, and albuminous ; increased secretion of light and albuminous urine.

PATHOLOGY.—Kidneys enlarged and congested ; cortical portion of the kidneys much thickened and of a deep-red color.

CLINICAL REMARKS.—Twenty years ago Martin Solon advised the employment of Mercury, both internally and externally, as a remedy in Bright's disease. Since the publication of Solon's work on *Albuminarie*, there has been a great diversity of opinion with regard to the value of mercurial preparations, some opposing their use on the ground that they are capable of exciting inflammation of the kidneys *de novo*, and of giving rise to albuminous urine, thus rendering them injurious in cases where the organ is already suffering from inflammation ; while others, like Wood,* commend them in all forms of the disease, except fatty degenerations and scrofulous or cachectic complications.

Guided by an unerring therapeutical law the homœopathist is not

* "Prac. Med.," Vol. II., p. 584.

subjected to the conflicting opinions and practices of the empirical schools. The very reasons which cause doubt and confusion in the minds of our opponents, viz., the direct local action of Mercury upon the renal glands, the production of albuminous urine, and other phenomena of Bright's disease, determine the homœopathist in his selection of it as the remedy. In the doses employed by the allopathist, it is not surprising that a drug having such decided homœopathic relations with this malady, should be productive of harm rather than benefit. As large and crude doses of Belladonna or Opium would do injury in acute cerebral inflammations, so must large and crude doses of Mercury aggravate seriously acute renal affections. But in the attenuated doses of homœopathy, the results are most happy—the delicate impressions produced not unfrequently arresting the progress of this grave disorder. In addition to the specific influence which several of the mercurial preparations exert upon the kidneys, we may take into account their attenuating effects upon the blood and their power of promoting absorption of plastic exudations into the parenchyma of the organ.

We have found it most frequently applicable in that form of the complaint, termed *large white kidneys*, (stage of inflammatory exudation), and prescribed in attenuations ranging from the third to the twelfth.

MERCURIUS-IODATUS.—*Symptoms.*—Shuddering succeeded by slight febrile reaction—hot and dry skin, dull pains in the head and back, restlessness, dryness of the mouth, thirst, morbid excitability of the nervous system, fetid breath, putrid or coppery taste, general anasarcaous condition of the entire body, glandular enlargements about the neck, paroxysms of rapid and difficult respiration, and pleuritic pains in the chest, bilious or dysenteric discharges from the bowels, scanty, red and hot urine; urine scanty and loaded with solid constituents, dull pain in the region of the kidneys.

PATHOLOGY.—In the absence of any definite facts with regard to the morbid alterations produced by this substance in the kidneys, we can only infer that changes are induced similar to those referable to the action of Mercurius-sublimatus-corrosivus. Both Iodine and Mercury administered separately, operate specifically upon the entire glandular system, superinducing inflammation, congestion and plastic exudations, and there is no reason to suppose that when in a state of chemical union, these peculiar properties are destroyed.

CLINICAL REMARKS.—Unfortunately there has not yet appeared a respectable proving of this valuable medicine. Even the few pathogenetic phenomena which we have recorded have been derived from observations during its administration in other maladies. But *ab usu in morbis*, we infer that it is one of our most valuable remedies in several forms of the disease under consideration. Especially in those forms which appear to be connected with scrofula, and constitutional

syphilis, it must always hold a high rank as a remedy. When the affection is complicated with hypertrophies, or hepatic disorders, it is also strongly indicated.—The lower attenuations of this medicine have proved most efficient in our practice.

MERCURIUS-SOLUBILIS.—*Symptoms.*—Nightly febrile paroxysms; in the evening and night, chilliness, followed by heat of skin, restlessness, frequent emissions of urine, and involuntary jerking, twitching, and tossing of the head and limbs, during sleep; chilliness and heat alternating, especially in the face, back, chest and arms; febrile symptoms with profuse perspiration; chilliness, followed by heat, and violent thirst; febrile paroxysms, characterized by a predominance of chilly sensations, sweats, and general feeling of *malaïse*; drowsiness in the day-time and sleeplessness at night; general weakness, languor, and lassitude; puffiness of the face; dropsical swellings of the feet and legs; ascites; fetid breath; tongue coated with a white fur and somewhat swollen; nausea, increased by eating; bitter vomiting; great sensitiveness and painfulness at the pit of the stomach, particularly to the touch; shortness of breath and dyspnoea, especially on ascending a stairs or in walking; stitching or burning pains in the chest; bruised, or cramp-like, or stitching pain in the small of the back; visible twitchings of the fingers and hands; frequent desire to urinate, with scanty discharge; frequent desire to urinate during the night; scanty, fiery-red urine; urine dark-red or brown; urine turbid, even while leaving the urethra, and depositing a sediment; flocculent discharges at the end of urination; symptoms worse during the night.

PATHOLOGY.—We are not aware that any examples are recorded illustrative of the morbid changes superinduced in the kidneys by this mercurial preparation; but from its pathogenetic and therapeutical action upon the system, it would seem to resemble the other preparations of Mercury in producing renal disorders.

CLINICAL REMARKS.—It has been found most useful in cases of Bright's kidney, which have been accompanied with secondary syphilis, diarrhoea, and dysentery.

TEREBINTHINA.—*Symptoms.*—Rigors, succeeded by feverish heat throughout the whole body, pulse hard and frequent, headache, red face, pain in the back, thirst, and sensation of dryness of the mucous membrane; dropsy; anasarca; ascites; general languor and loss of strength; drowsiness; confusion of ideas, relieved by copious and rapid micturition; dyspnoea; difficult and laborious respiration, as if from congestion of the lungs; aching pain in the left kidney; pressure in the kidneys when sitting, going off during motion; sensation of heaviness and pain in the region of the kidneys; pain and feeling of increased warmth in the kidneys; fleeting drawing in the right kidney, and thence proceeding to the right hip; violent burning, drawing pains in the region of

the kidneys; urine scanty, red, and sometimes bloody; scanty and red, or clear and profuse urine; complete suppression of urine; the urine deposits a thick, muddy, light-yellow sediment, like wine, and has the smell of violets; the urine deposits a slimy sediment twelve hours after micturition; haematuria; profuse menstruation; albuminous urine.

PATHOLOGY.—Inflammation and congestion of the cortical portion of the kidneys; kidneys somewhat enlarged, softened, and of a dark-red color, (on animals).

CLINICAL REMARKS.—Professor Henderson has cured several cases of both acute and chronic albuminuria with this medicine. Several medical gentlemen of our acquaintance are in the habit of using it as their principal remedy in the acute form of the disease, and commend it in the highest terms.

We have found the second dilution of this remedy of eminent service in many cases of both acute and chronic albuminuria. It will be observed that we have designated the second dilution. A large experience in this malady, with almost every strength of the medicine, has convinced us, that the best results can be obtained from this dilution. We regard Terebinthina as one of the very best remedies in Bright's disease.

3. CHRONIC DESQUAMATIVE NEPHRITIS. (Johnson)

Second Stage of Bright's Disease. Inflammatory Exudation. (Frerichs.) Large White Kidney.

This form of the disease not unfrequently exists for many months without attracting any special attention, and without any apparent renal symptoms. We have known cases to advance within a few days of a fatal termination with no abnormal phenomena except slight pallor of the skin, lassitude, and the occasional occurrence of dyspeptic symptoms.

In allusion to the insidious manner in which it sometimes becomes fully established, Dr. Johnson remarks as follows:—"A reference to case No. 13, will show that a patient may go to bed apparently in good health, and without having experienced any symptoms which had led him to suspect that his kidneys were unsound. In the night he is seized with symptoms of suppression of urine, and of severe abdominal inflammation. After an illness of a few hours he dies, and his kidneys are found to be so far disorganized by a disease, evidently of a chronic nature, that the wonder is, not that they ceased to act when they did, but that they had continued to discharge their functions so long.

"Again, in case No. 14, there was precisely the same disorganization of the kidneys as in the instance just alluded to. The patient was

* "Diseases of the Kidney," pages 170 and 171.

seized, after a slight indisposition, with palsy of one side, followed by complete insensibility, which soon ended in death. There was no appearance in the brain which would explain the symptoms, but the kidneys were in precisely the same state of chronic disease as those in the case just alluded to. The bladder was empty; no urine had been passed for several hours before death; and the patient's friends had often noticed that his urine was scanty, but he had appeared to be in tolerable health, and his medical attendant was not consulted before the last fatal attack."

These slight ailments may continue for an indefinite period—usually from two to eight months, when shortness of breath is observed after ascending a stairs, or other exertion, either accompanied or soon succeeded by the following symptoms: pale and waxen appearance of the skin; considerable emaciation; oedematous condition of the face, limbs and often of the entire body; usually some tenderness in the region of the kidneys on pressure, though this symptom is sometimes (*always according to Béquereil*) absent; dull aching pains in the lumbar region are occasionally, but by no means generally, present; frequent desire to pass water, especially during the night; gastric, intestinal, cardiac, and pulmonary disorders are quite prone to obtain; rapid and difficult respiration on making the slightest exertion, and often very distressing paroxysmal attacks occurring every evening and night, lasting from ten to fifteen hours, and rendering it impossible to retain a recumbent position for an instant during a paroxysm; debility; nausea; occasional vomiting; urine variable in quantity, color, and chemical and microscopical characters (See below); drowsiness; obtuseness of the mental faculties; convulsions; coma and death.

During the course of the disorder, a great variety of symptoms, not strictly pertaining to the malady, are often observed. Among these we have noticed, burning heat in the head, particularly on the vertex, relieved by copious applications of Bay-rum, Cologne, &c.; a peculiar white appearance upon the tongue, mostly on the sides and under part, looking as if it had been par-boiled,—sometimes accompanied with burning, smarting, and soreness of the furred part, appearing and disappearing, and generally accompanied with an amelioration of the other symptoms during its continuance, and for a short period after its disappearance; putrid, sickening odor of the breath; pulse sometimes frequent, weak and irregular (in cardiac complications), and at other times normal in frequency and volume; spasmodyc twitchings of the muscles of different parts of the body, usually worse at night; severe paroxysms of pain at the pit of the stomach, apparently of a spasmodyc character. Johnson alludes to the frequent occurrence of nose-bleeding and menorrhagia, and believes them to be in some way connected with the renal affection.

Becquerel asserts that the disease has usually the following three modes of commencement:

a. Chills, fever, vomiting, lumbar pains, pulmonary congestion, cough, rales, dyspnoea.

b. Fever and infiltration, which shows itself in all parts of the body at once. This mode of attack he considers most frequent.

c. The disease advances stealthily, and would remain unknown even though mortal, without an examination of the urine.

Alterations of the Urine.—In quantity it is variable—usually more abundant than in health, but sometimes less. In color it is mostly light, or colorless, varying from a smoky water-color to a dirty brown hue. It very rarely contains blood-globules, but when it does the urine assumes the color of dirty broth. Its density is less than that of the acute form, although greater than that of normal urine. The specific gravity varies from 1005 to 1015. It has an acid reaction, and the usual tests precipitate albumen.

By the microscope we may detect epithelial cells, amorphous granular fragments, granular epithelial cylinders (the fall of the epithelial sheaths of the tubuli), termed by Dr. Johnson "granular casts," and in a very few instances, blood-globules. These blood-globules, according to Johnson, become more unfrequent the farther the disease advances from the acute stage, until in the third stage (small contracted kidneys) they are never to be found. Robin asserts that epithelial cylinders are occasionally found in normal urine, so that these appearances alone would not determine the existence of Bright's Kidney. Becquerel supposes that the quantity of albumen in these urines varies from $\frac{1}{100}$ to $\frac{1}{1000}$.

Prominent Concomitant, or Secondary Phenomena. Dropsy.—As soon as the normal epithelium of the convoluted tubes has become so far degenerated and disintegrated as to be incapable of separating from the blood urea, uric-acid, and the other normal solids of the urine, they accumulate in undue quantities in the blood, and nature strives to eliminate them through other channels—the skin, the serous-membranes, the intestines, the lungs, the liver, and all other available outlets. During these vicarious processes of elimination, the capillaries of the tissues acted on, become obstructed, and their circulation impeded in such a manner as to permit exudations of serum through their walls, and thus dropsical effusions in various parts of the body. At the same time the congested Malpighian bodies allow the escape of undue quantities of serum, thus causing disalbumination of the blood from the normal standard of 70 or $\frac{100}{100}$ to 10 and even $\frac{5}{100}$. It is evident then that two morbid conditions constitute the most direct causes of dropsical effusions,—by retention of excrementitious urinary constituents and disalbumination of the blood. Further on we shall

again allude to this subject. Dropsy is not invariably present in this form of the disease, especially when the renal secretion is abundant, or when there are frequent and copious discharges from the bowels, by which the poisonous blood accumulations may be evacuated. In other instances the constitution appears to possess the power to resist for a long time the deleterious action of the retained urinary constituents, without the supervention of dropsy or other troublesome symptoms. But in general, nature asserts her rights, and opens every available channel in order to expel the noxious matters from the vital fluid, even at the risk of irritating, and of producing serous effusions from these new and unused tissues of elimination. The water appears to accumulate in one or another place without apparent cause. Perhaps it is earlier and oftener observed in the face than elsewhere; and in patients of active habits we generally find infiltration of the limbs and ascites. Effusion into the cavity of the chest is an early and rather frequent result of this disease; but we very rarely meet with ventricular dropsy.

The composition of the infiltrated water is the same as that of the serum of the blood diluted with much water. Of one thousand parts, the solid constituents constitute only from ten to fifteen parts, instead of eighty to one thousand, as in the serum, and forty to fifty to one thousand, as in affections of the heart.

In health, the proportion of albumen in the blood is from seventy or eighty to one thousand parts. In acute desquamative nephritis, the proportion is reduced below $\frac{1}{100}$, at which point infiltration must occur. In the chronic forms this disalbuminution must be still greater, to give rise to dropsy.

These dropsical accumulations sometimes become so extensive as to cause very serious inconvenience, and not unfrequently danger to life. Pleural, ventricular and peritoneal effusions are the most dangerous. Infiltrations of the extremities and of the scrotum often become very extensive and troublesome; but they may be readily and safely relieved by delicate scarifications. We have often adopted this mode of temporary alleviation, and always with success and safety.

Respiratory Apparatus.—Among the vicarious channels for the elimination of the excrementitious renal accumulations in the blood are the pulmonary structures. In the act of elimination the capillaries of the pleura, the pericardium and of the cellular structure of the lungs often become engorged, and effusions more or less extensive occur.

Some of the first symptoms, therefore, which arrest the attention of both patient and physician, are shortness of breath, increased to a painful extent from the slightest exertion, and a sense of oppression throughout the entire thoracic region. In the first instance there is only pulmonary œdema with effusion into the air-cells of the lungs; but

in more advanced stages of the disorder, large and dangerous accumulations occur in the thoracic cavity. In robust and plethoric individuals, pneumonias and bronchial affections are likely to be superinduced. In scrofulous subjects hemoptysis and tubercular consumption are not unfrequently developed.

We have already alluded to the periodical recurrence of evening and nightly paroxysms of dyspnœa. This symptom has been observed in both the second and third stages of the malady. It usually commences in the afternoon and evening, and continues with such severity as to prevent the patient from taking a moment's rest in the recumbent posture, until some time in the morning, when there is generally a remission for a few hours.

During the existence of this stage, if the patient takes cold, or is subjected to the influence of a cold and humid atmosphere, pleurisy or pericarditis may occur; although these attacks are far more common in the stage of absorption.

Albumen has often been detected in the urines of children suffering from membranous croup. The rationale of this phenomena has not yet been fully explained.

Digestive Apparatus.—Another channel for the elimination of the retained urinary excrements, is the gastro-intestinal mucous membrane. The influence exerted upon the stomach is two-fold; first in the form of irritation of the gastric mucous membrane, and consequent symptoms of indigestion, like nausea, occasional vomiting, eructations, acidity, flatulent distention, heart-burn, oppression gastric sensitiveness, &c., and secondly upon the nervous apparatus of the stomach, producing a train of severe neuralgic symptoms. The stomach sometimes becomes so seriously involved that the mucous membrane becomes thickened, softened, and in rare instances, ulcerated to a considerable extent. Severe paroxysms of neuralgic pains—usually at the pit of the stomach, are not an unfrequent attendant upon the malady. We have known cases run through the entire second and third stages to a fatal issue, with scarcely a pain or other unpleasant symptom, except those which have been referred to the stomach—sometimes by both patient and physician.

The action of the urea, ammonia, &c., upon the intestinal mucous membrane produces flatulency, sensitiveness of the bowels, and diarrhoea, and post-mortem examinations now and then reveal redness, ulcerations, and softening of portions of this structure.

Bernard detected ammonia in large quantities in the stomachs and intestines of dogs whose kidneys had been extirpated. This ammonia is supposed to arise from the conversion of urea, either in the blood-vessels or in the digestive canal, from contact with the secretions it here meets with.

Brain and Nervous System.—Drowsiness, convulsions, and coma usually terminate the life of the patient. These symptoms approach gradually and increase in intensity for a period varying from a few hours to several days, when convulsions or complete coma extinguish life.

In two instances we have noticed the frequent occurrence of involuntary spasmodic twitchings in various parts of the body. These attacks are somewhat painful, mostly confined to special parts, but sometimes affecting several portions of the system at once.

As a general rule, cerebral lesions are not found in these cases, notwithstanding the very grave character of this complication. The direct cause of these cerebral phenomena is uræmic, or according to Frerichs, ammoniacal contact with the cerebral tissues, or serous effusion into the ventricles.

The immediate effect of uræmic or ammoniacal poisoning upon the cerebral and nervous tissues, is to impair their vitality and to depress their ordinary manifestations. This is evident from the insidious approach and progress of the symptoms; general indifference to surrounding objects; somnolence; slowness of speech; the patient is with difficulty roused to a full appreciation of what is transpiring around him, and seems to fall asleep in the midst of a conversation, with his eyes open; deep and slow respiration; temporary confusion of ideas; sluggish performance of all the functions.

Cardiac Complications.—At an early period, Dr. Bright observed that an intimate connection existed between granular kidney and heart-disease. He supposed that the cardiac affections were for the most part due either to the stimulant action of the poisoned blood upon the heart itself, or upon the capillary circulation, affecting it in such a manner "as to render greater action necessary to force the blood through the distant subdivisions of the vascular system." Johnson, Rees, and other eminent English writers adopt the latter explanation.

Hypertrophy and dilatation are the most common organic changes of the heart super-induced, or connected with chronic desquamative nephritis. And from the circumstance that valvular lesions are quite uncommon in these cases, it has been inferred that the abnormal blood constituents in their continual passage through the heart have stimulated its muscular structure into hypertrophy or dilatation.

When the renal malady exists in gouty or rheumatic subjects, we shall sometimes find valvular lesions, fibrous depositions, and other serious organic changes which had been produced by these maladies before the existence of the kidney-disorder. Such instances render cases still more complicated and dangerous, both from the local and remote symptoms to which they give rise. It is highly probable that the kidneys and the heart often become affected simultaneously, and

from the same cause, in individuals suffering from gout. The action of the excessive quantity of uric acid, the urates, &c., in their constant passage through the heart, producing organic changes in this organ, and during their elimination through the kidneys, congestion of the *tubuli uriniferi*. In examples of this kind, both organs are affected with equal promptness and severity, and they should both receive prompt and efficient attention from the physician.

Hepatic and Spleenic Complications.—These organs sometimes become involved during the existence of renal disease. For reasons similar to those which obtain in the production of pulmonary, gastric, cerebral and cardiac affections, the liver, and in all probability, the spleen take on morbid actions of various kinds, according to the constitutional, or acquired peculiarities of patients. Examinations of the alvine discharges during the progress of albuminuria, always indicate more or less disorder of the hepatic secretion. And if the same attention were to be given to the minute changes caused by the retained urinary excrements upon the liver and its secretion as has been bestowed upon the kidneys and the urine, we have no doubt that much additional light would be thrown upon the intimate nature of the malady; and that many morbid conditions which are at present inexplicable could be satisfactorily explained. In the act of circulation the blood-poison is constantly brought into contact with almost all parts of the organism, and operates simultaneously upon those organs and tissues with which it has affinities—as for example, the kidneys, the skin, the liver, the lungs, the digestive apparatus, the serous membranes, &c. The results of these impressions are derangements of function or organic lesions, according to the amount of retained foreign matters in the blood, the nature and importance of the tissues involved, and the constitutional peculiarities of patients. And as a disordered function of one organ is often compensated for by extra and vicarious labors of other organs, a mutual morbid reaction is established between various tissues of the body for the general good. Each structure strives to expel the noxious invader, each shares the general danger, and each receives more or less injury. Johnson asserts that the liver is affected in a large proportion of cases of chronic nephritis, and assigns as a reason the frequent common origin of the two diseases, viz., high living and intemperance in the use of alcoholic liquors. This gentleman regards *cirrhosis* as the most common hepatic complication in these cases, although he has occasionally met with contraction and induration of the liver, with its usual concomitant *ascites*.

Rheumatic and Gouty Complications.—The frequent occurrence of chronic nephritis in gouty subjects has been noticed by many writers. Upon the supposition that the renal affection was always associated with, and dependent upon a gouty diathesis, Dr. Todd gave to the third

stage of the malady the designation of *Gouty Kidney*. This hypothesis of Dr. Todd is doubtless erroneous; but it is nevertheless true that the same abnormal blood constituents which produce the phenomena of gout, are also capable, under favorable circumstances, of developing desquamative renal disease. But as this is only one of many cases possessing similar powers, the designation of Dr. Todd is manifestly inappropriate. The renal affection is by far the most common in those cases of gout which appear to be associated with chronic eruptive disease, especially porrigo and eczema. The skin and the kidneys are the two chief eliminators of the morbid blood-constituents, in both gout and rheumatism; and it is for this reason that we so often find cutaneous and renal complications in old cases of this description. The passage of the urates, uric acid, &c., through the cutaneous capillaries obstructs and retards their action, rendering them incapable of throwing off the effete matters presented to them, and thus causing the accumulating matters to force their way out of the blood, in the form of vesicular or pustular eruptions. In passing through the kidneys the same substances often cause chronic nephritis. When brought in contact with the smaller joints they give rise to gout. Less frequently the renal affection has been associated with chronic rheumatism, and for the same reasons as those just adduced with reference to gout.

Uterine Complications.—Of eleven cases of chronic albuminuria in females which have come under my observation, all but one had suppression of the menses during the continuance of the disease. This exceptional one had frequent and exhausting attacks of menorrhagia, which contributed much to hasten a fatal result. Johnson, while alluding to the general absence of the menses in these cases, has observed menorrhagia in so many instances as to deem the circumstance worthy of special mention. Not unfrequently a sudden check to menstruation is the first link in the morbid chain of symptoms, which lead to albuminuria; and it is not impossible that a vicarious menstruation through the kidneys may in some instances develop in them the malady in question. Rayer suggests that the constant drain from the blood of its hæmatoxin, induces such a condition of anaemia as to arrest menstruation from pure lack of vitality necessary to sustain this function.

ALTERATIONS OF THE BLOOD.—In estimating the composition of the blood in albuminuria, regard must be had, firstly, to the primary causes of the blood-contamination, and, secondly, to their effects upon the kidneys, and the further alterations of the blood from renal obstruction. If the original blood-poison be one of a transient nature and easy of elimination, the issue will probably be favorable; but if the primary cause is of a chronic character, persistent, deep-seated, readily reproduced, and difficult of removal, our opinion respecting the final result must be unfavorable. In the first category may be included retained perspiration, scarlatinal,

erysipelatous, typhoid, choleraic, alcoholic, and other similar agencies; while in the latter class we may place chronic gout and rheumatism, certain chronic cutaneous affections, constitutional syphilis, scrofula, incurable hepatic, cardiac, and pulmonary disorders, deleterious drugs, &c.

Healthy blood may be said to consist of three separate elements, viz: 1, *the red globules*, suspended in their colorless liquor; 2, *fibrine*; 3, *serum*, composed of albumen dissolved in alkaline water. Besides these principal elements it contains phosphates of magnesia, ammonia, and lime, lactates of soda and magnesia, and common salt. The analysis of Dumas of 1000 parts of healthy blood gives 790 of water, 127 of globules, 3 of fibrine, and 80 of solid constituents of the serum, of which 8 are inorganic. Any material alteration of these normal constituents induces more or less derangement of the general health; and the presence of either of these elements in the urine is a sure indication of serious renal lesion. So any addition to the blood of substances foreign to it, must of necessity give rise to more or less disturbance, according to the nature of the contaminating agent. The most prominent alterations of the blood in chronic Bright's disease are, deficiency of albumen in the serum, which is usually of low density, great diminution of the red globules, and the retention of certain urinary excrements—urea, uric acid, and the several retained salts of the urine. Andral and Gavarret made five analyses of the blood in many different cases of the disease, and with the following average result: of 1000 parts of blood, they found a considerable increase of water (837·1 in place of 790; nearly the natural quantity of fibrine (2·7 in place of 3); a marked diminution of the red globules (91·8 in place of 127); a notable diminution of the solid matters of the serum, and especially of albumen (68·4 in place of 80).

Until a recent date it has been supposed that most of the secondary morbid phenomena incident to this affection, were due to the presence of urea in the blood, and to the action of this substance upon the various tissues of the organism. From this hypothesis the malady has received the designation of *uræmia*. But the experiments of Frerichs have placed this matter in a new light. This gentleman denies that the blood-poisoning is due to urea, but attributes it to carbonate of ammonia, which has been formed from this substance within the blood-vessels. He infers this from the following circumstances: ammoniacal odor of the breath; chemical indications of ammonia in the breath; traces of ammonia in the alvine discharges, and in several secretions of the body—the perspiration, bile, and certain mucous and serous secretions; and an abnormal quantity in the blood, (of which it is a natural constituent, and serving to retain it in a fluid state).

As an additional confirmation of this view Frericks adduces the fact

that large quantities of urea are sometimes detected in the blood of patients who remain free from all cerebral, and other symptoms, which are supposed to be peculiar to uræmic poisoning. Injections of urea into the blood-vessels of dogs have also been made without producing its supposed characteristic effects upon the organism; while similar injections of carbonate of ammonia have speedily induced convulsions. Another circumstance confirmatory of this opinion of Frerichs, may be found in the fact that the pathogenesis of carbonate of ammonia corresponds very closely with the phenomena of Bright's Disease. The following symptoms from "Jahr's" Symptomen-codex," page 67, demonstrate this: "dropsical swellings; the head feels muddled, dull, stupefied; great difficulty of breathing, especially in ascending a few steps, or on making the least exertion; frequent palpitation of the heart; severe dyspeptic symptoms; great emaciation of the whole body; comatose conditions; convulsions." Both urea and carbonate of ammonia are normal constituents of healthy blood, the latter in all probability being converted from the former by the action of the albumen of the serum within the blood-vessels, and so long as the proper proportions are maintained, no disturbances or derangements of function occur; but when urea in excess pervades the blood, it is rapidly converted into carbonate of ammonia, the blood becomes poisoned, and the secondary effects of chronic nephritis due to the action of carbonate of ammonia, manifest themselves. When we remember with what facility urea may be converted into carbonate of ammonia by contact with fermentable substances like albumen, mucus, and certain alkalies, and that several of these substances are always present in the blood of patients suffering from albuminuria, the hypothesis of Frerichs will not appear unreasonable. So long as the normal composition of the blood remains unchanged, only the necessary quantity of ammonia to retain it in a fluid state, is converted from the circulating urea; but when this condition becomes changed, and new elements are added to the blood, other affinities occur, new chemical action takes place, inordinate quantities of ammonia are formed, and ammoniacal poisoning results.

Schetlein and Renling object to this hypothesis, because that ammonia ($\text{CO}^2 \text{ Az H}^+$) is expired during the course of many diseases, typhoid fevers, yellow fever, cholera-asphyxia, malignant erysipelas, small-pox, scarlet-fever, and similar maladies, and also in the death agony. In these instances the ammoniacal breath is caused by an actual loss of vitality and consequent decomposition of the blood, by which the ammonia which holds it in solution, is set free and allowed to escape through the lungs. In chronic nephritis quite a different condition obtains, since there is no actual decomposition of the blood, and no diminution of the normal amount of ammonia; but a con-

excess of this substance derived from the retention and conversion of urea. Nature strives to eliminate this superfluous agent through the lungs, the intestinal canal, the skin, and perhaps other channels. It is doubtless true that urea also exerts a deleterious influence upon the system when existing in excess in the blood; but its toxic properties are much less important than those of ammonia. Other retained urinary substances are likewise capable of poisoning the blood. Gallois has repeatedly demonstrated this fact with regard to an excess of uric acid in the blood. This agent poisons in a less dose when injected into the blood than when taken by the stomach. It causes acceleration of breathing, trembling of the limbs, jerking of the muscles, subsultus, convulsions, tetanus and death.

PATHOLOGICAL CONDITION OF THE KIDNEYS.—The following is an excellent general description of the condition of the kidneys in this form of the disorder. "The kidney is still much larger and heavier than is natural, and smooth on its surface; but the sanguine congestion is diminished, or gone; while the inflammatory exudation into and among the proper tissues of the glands is great and manifest. This exudation, by its presence and its pressure within and around the tubules, empties the capillary vessels of their blood, and keeps them empty. The cortical portion of the kidney, still unduly broad, loses its red color, becomes pale or yellowish, and contrasts more strongly with the red lines of the pyramidal bodies. Gradually the matters exuded suffer further change, and sometimes undergo a fatty degeneration. The tubules lose their uniform cylindrical shape, and bulge a little here and there; their epithelial cells enlarge, become opaque, contain granular matter, and perhaps oil-globules; finally, they crumble down, and are partly washed away with the aqueous portion of the urine which proceeds from the Malpighian bodies."* The kidneys are generally enlarged, slightly deformed, and a little augmented in consistence. Granulations on red or grayish ground of the size of millet-seeds, accumulated or isolated, and appearing whiter than the rest of the tissues—more abundant at the two extremities, and towards the outside of both kidneys. The cortex thickens at the expense of the tubular substance.

Authors have differed so much respecting the classifications of the various forms of the disease, that some confusion exists in their symptomatic and pathological description. Thus, Dr. Bright recognizes *three forms or varieties*: Martin Solon admits *five degrees or varieties*; M. Rayer makes a general division of the malady into *acute* and *chronic albuminous nephritis*, and then subdivides these into six other forms—*two* pertaining to the *acute*, and *four* to the *chronic stage* of

* "Watson's Practice of Phys.," p. 1028.

the disorder: Christison admits only *three degrees* of the disease, the two first characterized by similar anatomical conditions of the kidneys, viz., a deposit in the cortical substance of a grayish yellow matter, slightly granulated in the first degree, and decidedly so in the second degree, the granular substance resembling cheese, and involving chiefly the cortical substance. He usually found more sanguineous congestion in the first, than in the second degree. In the third or last degree, the morbid deposit gradually invades the remaining tissue of the kidneys, impairing to a greater or less extent their normal structure and functions. By this it will be perceived that Christison recognizes only one kind of morbid change for all of his three degrees, the differences consisting in the *extent* rather than the *kind* of morbid action. Bright denies the existence of any morbid deposit in the *first form*: but asserts that the cortical substance is transformed into a granular tissue in the *second form*. In this second form he always found the kidneys still larger than natural, and that he could render the granulations more distinct by maceration. The third, fourth, and fifth forms of Mr. Rayer, and the second and third degrees of Martin Solon, correspond with sufficient accuracy for practical purposes, to the second stages of the English writers. In all instances, the volume and weight of the kidneys are above the normal standard, the red and marbled spots peculiar to the acute form, have diminished or entirely disappeared, granular deposits are found in the cortical substance, and sometimes in the tubular cones, more or less thickening of the mucous membrane of the pelvis and calices of the kidneys, the external surface of the kidneys is ordinarily of a pale yellow color, but is now and then dotted with milk-white spots, and glossy, or, in a very few cases, with a few brown or slate-colored spots. One of the most direct and important effects of the disease upon the renal glands, is the partial or total destruction of the epithelial lining of the convoluted tubes. During the earlier periods of the affection, the cells are not ordinarily detached in very large quantities, and as these are washed off rapidly by the watery portion of the urine from the Malpighian bodies, the renal function is only moderately disturbed. But after the desquamative process has continued for a considerable period, a greater or less accumulation of epithelial cells takes place in the tubes, and they become so much choked up and obstructed as to prevent their reformation. In the mean time they become disintegrated, the tubes are distended, pressure is made against the remaining epithelial linings of the tubes and the Malpighian bodies, thus adding an additional cause of irritation to the renal structures.

"A microscopic examination shows that some of the tubes become so completely filled by their epithelial contents, that a further formation of cells within them is impossible for want of room, so that the re-

production of epithelium appears to be entirely arrested."* After this process of desquamation and disintegration have continued for some time, "the basement membrane of the tube is thus left quite denuded, or with only a few broken particles of epithelium scattered over its surface."† Dr. Johnson describes another process by which the tubes become destroyed without any actual desquamation of epithelium. This process is denominated *disintegration* of the epithelial cells. In the process of desquamation the cells are thrown off from the basement membrane into the convoluted tubes, entire, and are either washed out of the tubes by the watery part of the urine, or accumulate within them to their injury. "Disintegration may occur, however, either in the cells which have accumulated in the tubes after being shed in an entire form by a process of desquamation," or in those still attached to the tubes.

"With reference to the two processes, already alluded to," remarks Dr. Johnson, "by which the epithelium becomes disintegrated, I have observed that only the true desquamative process leaves the tubes quite denuded, and that the disintegration of the epithelium, unaccompanied by desquamation, destroys the tubes without a previous denuding process." Apparently the most common "result of the destruction of the epithelium, is the gradual wasting of the tube." "The materials which are occasionally found in the degeneration of the tubes are, first an unorganized fibrinous or albuminous material; second, oil; and third, serum."‡ Johnson supposes that this fibrinous or albuminous material is secreted by the basement membrane after the destruction of its epithelial cells."

After the convoluted tubes have become denuded by the destruction of their epithelium, they occasionally become dilated into transparent cysts, containing serum, and sometimes thick and discolored liquids. In other and rare instances, some of the denuded tubes become lined with transparent nucleated cells, which are supposed by Johnson, to serve as a substitute for the normal epithelium, and whose office is "to secrete a serous or watery liquid." Respecting the condition of the blood-vessels, they become distended with blood of a vitiated quality, their linings become irritated and thickened, and their entire structures become so enfeebled as to impair or suspend their normal functions. In allusion to this subject Johnson remarks: § "the appearances which I have observed in the blood-vessels are such as indicate an impediment to the circulation through the inter-tubular capillaries, and a consequent increase of pressure upon the vessels which, in the order of the circulation, lie behind these. The Malpighian

* "Diseases of the Kidney," by Geo. Johnson, p. 212. † *Loc. cit.* ‡ Johnson.

§ Diseases of Kidneys, p. 228.

capillaries and the arteries have their coats remarkably thickened, while the walls of the inter-tubular capillaries and of the emulgent vein present no appearance of hypertrophy or thickening."

"We consider the nature of Bright's disease* to consist in an inflammatory process, which proceeds from a stage of hyperæmia to one of stasis, and then gives rise to a product, which is not only remarkable by its peculiar character, but which, in well-marked cases, by its excessive accumulation, causes a singular alteration in the appearance and structure of the kidney. It commonly runs, as we have already stated, a chronic course, with occasional exacerbations, but it is sometimes acute."

The following are among the pathological degenerations observed with the microscope by Kolliker in Bright's disease. † "The *membrana propria* is frequently thickened to 0·001, or even 0·002 of a line, when it often presents, on the inner aspect, very delicate, closely approximated, transverse striae. The epithelial cells, particularly in the cortical substance, frequently contain oil-drops in considerable quantity, so as often to present a deceptive resemblance to the cell of a fatty liver, and at the same time they are usually enlarged to a diameter of 0·02 of a line. Together with the oil, pigment granules (of the coloring matter of urine?) occur in them (also in the straight canals), whereas the concretions of uric acid and calcareous salts, which are so frequently met with in the canals of the tubes in the vertebrata, have not as yet been demonstrated with certainty in the cells themselves. Colloid-like, bright yellow masses are very frequent in the epithelial cells, which then most usually increase in size, dilate into slender cysts as much as 0·05—0·072 of a line long, and finally, by bursting, empty themselves of the colloid substance, whence the latter is found free in the uriniferous ducts, and also in the urine."

"The Malpighian bodies may also expand into cysts, in which, together with a clear fluid, the atrophied *glomerulus* is often visible on the wall."

"The *tubuli uriniferi* contain *fibrine*, in cylindrical masses, corresponding to the cavities of the tubules, and also the above-mentioned *colloid-like substance*; concretions in the ducts of Bellini, consisting, in the adult, chiefly of carbonate and phosphate of lime: in new-born infants, of uric-acid salts, which give the pyramids a brilliant golden-yellow color, and, if not exclusively, still only occur in children who have already resired (between the third and twentieth day after birth)."

DIAGNOSIS AND PROGNOSIS.—The principal phenomena which pertain to chronic albuminuria are the following: urine pale and watery, some-

* Rokitanski's Path. Anat., Vol I. p. 155. † Diseases of the Kidneys, p. 228.

times slightly turbid, or smoky—usually augmented in quantity—of a diminished specific gravity—of an insipid odor resembling beef-broth—persistently frothy on agitation—albuminous—deficient in urea and the normal salts, and containing “granular casts,” scattered portions of disintegrated epithelium, and a few entire epithelial cells; œdema of the feet and ankles, afterwards extending to the legs and thighs, and often general infiltration of the cellular tissue, and effusions into the serous cavities; unusual paleness of the skin, in consequence of the poverty of red-globules in the blood; excess of urea, carbonate of ammonia, and urinary salts, and a diminution of albumen and red-globules in the blood; and in a majority of cases dyspeptic symptoms, dryness of the skin, and habitual dyspnoea, especially on making any exertion. From acute albuminuria it may be distinguished by the lighter color of the urine, its greater quantity, its lower specific gravity, the presence of granular casts, and scattered bits of disintegrated epithelium, absence of blood-globules, less renal irritation and pain, less febrile disturbance, and the less rapid progress of the malady. From hepatic, cardiac, and other forms of dropsy, as well as from other maladies having similar symptoms, it may be recognized by the presence of albumen, and disintegrated epithelium in the urine.

The prospects of recovery will depend upon the duration and extent of the renal affection, the secondary complications to which it has given rise, and the curability or removal of the acting cause. If the convoluted tubes have entirely lost their epithelial lining, and other formations have taken their place, like cysts or morbid deposits; or if the tubuli often having been denuded of epithelium, have shrunken and become nearly obliterated, a cure must not be expected. This condition will be indicated by the gradual diminution in the urine, of epithelium, the continued absence of urea and the normal urinary salts, the persistent diminution in the density and lightness of color of the urine, paleness of the skin, great emaciation, dropsical infiltrations and effusions, and other secondary ailments. A sudden diminution of the urinary secretion, especially in advanced stages of the disease, indicates immediate danger. The most common and dangerous of these secondary affections are inflammations of the serous membranes of the thorax, abdomen, and brain, or effusions into their cavities. Of these, the cerebral complication is the most alarming, and the one which most frequently terminates life. Next in importance to this are effusions into the pleural and peri-cardial cavities, from whence proceed the distressing paroxysms of dyspnoea and palpitation of the heart which so often afflict the subjects of this malady. When one or more of these serious complications are present, and the abnormal conditions of the urine above alluded to obtain, the prognosis will be unfavorable.

But when the exciting cause, is susceptible of ready removal, like

abuse of alcoholic liquors, and exposure to a cold and humid atmosphere, and the renal desquamation has not been of long-standing or extensive, a reasonable expectation of cure may be entertained.

Valleix in his "*Guide du Medecin Practicien*" p. 154, presents us with the following diagnostic table.

CHRONIC BRIGHT'S DISEASE.

Urine pale, smoky, and having an astipid odor.

Its density is diminished; and it has lost most of its salts and urea.

Albumen in considerable quantity, and always present.

Cœdema almost always commences in the lower limbs; and ascites comes afterwards.

Other slight symptoms of Bright's disease.

ACUTE OR CHRONIC BRIGHT'S DISEASE.

No fever (chronic form) or slight fever (acute form.)

Dropsy.

Never Suppuration.

Pain in the kidneys wanting or slight.

No painful retraction of the testicles, nor pains in the grandes lèvres, &c.

ALBUMINOUS URINE OF BRIGHT'S DISEASE.

No purulent globules.

Urates and phosphates in less quantity than natural.

Other symptoms of Bright's disease.

No pellicle (cremor) on the surface.

OTHER CHRONIC AFFECTIONS WHICH PRODUCE DROPSIES.

Urine of a normal color, and preserving a urinous odor.

Density normal; salts and urea normal.

Albumen in small quantity; and only appearing transiently.

In diseases of the liver, ascites precedes edema.

Characteristic symptoms of diseases of the heart, liver, &c.

SIMPLE ACUTE OR CHRONIC NEPHRITIS, WITH ALBUMINOUS URINES.

Always pretty well marked fever.

No dropsy.

Often terminates in suppuration.

Pain in the kidneys more or less severe.

Painful retraction of the testicles, and pain in the grandes lèvres, &c.

URINE RENDERED ALBUMINOUS BY THE PRESSURE OF PUS.

Purulent globules, distinguishable by the microscope.

Salts often more abundant than in the normal state.

Symptoms of inflammation of the urinary passage.

Pellicle (cremor) on the surface, after a few hours repose.

TREATMENT.—ACONITUM-NAPELLUS.—*Symptoms:* face pale, sunken and bluish; stupid expression of countenance; skin of a deep yellow, or white color; heat and dryness of the skin; coldness of the extremities; sleepless and restless at night; sudden sinking of strength; paroxysms of suffocation with anxiety, and aggravation of the difficulty in the evening; respiration short, imperfect, irregular, with feeble pulsations of the heart; shortness of breath, especially when sleeping, after mid-

night, or when rising from the recumbent posture; pressure in the stomach and hypochondria accompanied with paroxysms of shortness of breath, and even asthmatic symptoms; pleuritic, pneumonic, and cardiac complications; nausea, vomiting, thirst, general heat, profuse sweats, and enuresis; peritonitis; ascites; pains in the loins; sensitiveness in the region of the kidneys; numbness in the small of the back, extending as far as the lower limbs; drowsiness; he sleeps while sitting in his chair with his head bent forward; dyspnoea, convulsions, paralytic weakness and death; general convulsions; convulsive movements of separate parts, the cheeks, extremities, &c.; stupor with convulsive motions of the facial muscles, and the eyes closed; loss of consciousness during the convulsions; copious discharge of urine, which deposits a red sediment after standing; retention of urine; enuresis, sometimes accompanied with profuse sweat, diarrhoea, and colic.

Pathology.—See page 29 of this volume.

Clinical Remarks.—When the renal affections become complicated with disease of the serous membranes, like pleuritis, peritonitis, and arachnitis, Aconite will prove an important remedy. So likewise, in hepatic, pneumonic, enteritic, and other inflammatory complications, it must always be regarded as one of our most valuable medicines. In such cases it must be looked upon in the light of an auxiliary rather than as a direct local specific. The symptoms are usually worse in the evening and early in the morning.

AMMONIUM-CARBONICUM.—*Symptoms:* face pale and bloated; pallor of the face with physical and moral weakness; muscles soft and flabby; impaired memory; mind dull and confused; drowsiness in the day time; uneasy, disturbed and unrefreshing sleep at night; extreme lassitude and sense of fatigue; weakness of digestion; pressure at the stomach, nausea, and oppression after eating; dyspnoea and palpitation of the heart after every exertion; difficult breathing at night; painful oppression of the chest; pain in the small of the back, increased by motion or walking; bruised or shooting pains in the region of the kidneys; violent throbbing pain in the small of the back and in the loins when at rest; drawing pain from the small of the back, extending to the abdomen and hips; spasmodic twitchings of the arms; convulsions; frequent urging to urinate especially at night; involuntary emissions of urine at night; urine turbid, whey-like, and very ammoniacal and musty smelling; discharge of urine leaving chalk-like spots; cloudy, reddish urine mixed with blood; symptoms worse in the evening and in the open air.

Pathology.—Lining membrane of the kidneys inflamed and thickened; kidneys enlarged, soft, of a light-yellow color, and the convoluted tubes obstructed with detached epithelial cells (in animals).

Clinical Remarks.—This medicine has proved very beneficial in

albuminous nephritis following scarlatina, typhoid fevers, malignant erysipelas and small-pox. In such cases we have observed unequivocal benefit from the employment of the lower attenuations. A reference to the pathogenesis above given will enable the physician to determine its homeopathic relations with special groups of morbid symptoms.

APIS-MELLIFICA.—*Symptoms:* paleness of the face; oedematous swellings of the face, and extremities; nausea, eructations, heart-burn, rapid breathing at night; difficult and anxious respiration after exercise; hurried and difficult respiration with fever and headache; pain and soreness in the region of the kidneys on pressure or on stooping; constant dull pains in both kidneys, with very small secretion of red urine; frequent and copious discharge of urine; repeated micturition every few minutes; burning in the urethra before and after micturition; frequent and painful urging to urinate, with scanty discharges of urine mixed with blood.

Pathology.—(See Apis, p. 31, this Volume.)

Clinical Remarks.—This is undoubtedly one of our most valuable remedies in both the first and second forms of Bright's disease. If administered in doses sufficiently attenuated, it will often afford marked relief, and sometimes effect permanent cures. It is to be regretted that more careful experiments have not been made with reference to its special action upon the kidneys, and the morbid alterations it produces upon the secreting tubes and other portions of the renal tissue, as well as in the urine. This defect in proving, applies to most other drugs as well as to this one.

APOCYNUM-CANNABINUM.—As a palliative in removing the dropsical accumulations consequent on this form of renal disease, this medicine is held in high estimation by many physicians of our school. Several medical men of this city are in the habit of prescribing "Hunt's decoction," and, as they assure us, with much success. (See Apocynum-cannabinum, p. 32, this Volume.)

ARSENICUM-ALBUM.—*Symptoms:* face pale and sunken; or lead-colored, or bluish, or yellow, livid and disfigured; face swollen from anasarca; face bloated, puffed, and red, or pale. Emaciation. General anasarca. Dropsy of the chest with the usual concomitants, suffocative oppression, and arrest of breathing, in the evening, or at night in bed; anxious and oppressive shortness of breath on walking, or on making any exertion; palpitation of the heart, particularly at night. Abdominal dropsy with the usual concomitants, indigestion, oppressive respiration, &c. Nausea, vomiting, eructations, distention and burning of the stomach after eating, sensation of faintness at the stomach, tremulousness of the body. Pain in the kidneys, extending towards the bladder, and then vesical tenesmus. Sense of fullness and congestion in the renal region. Turbid urine which deposits a sediment and looks like

clay. Urine alternately increased and diminished. Thick, cloudy, pus-like urine. Frequent urging to urinate, especially during the night. Involuntary micturition, even at night during sleep. Urine colorless, turbid, albuminous, and depositing a slimy sediment. Frequent, painful, and difficult micturition. Urinary secretion diminished or suppressed. Spasms. Convulsions. Coma. Symptoms worse in the evening, at night, and after eating.

Pathology.—A reference to the pathology of Arsenicum will demonstrate from a pathological point of view, its strong homœopathic relations to this form of renal disease. Both the morbid alterations of the glands and of the constituents of urine, bear a most striking analogy of the present malady.

Clinical Remarks.—We have already alluded to the remarkable homœopathieity of this medicine to acute Bright's disease. It will be found equally appropriate in the chronic varieties of the affection. Indeed, when the renal disease is accompanied with dropsical effusions, or serious gastro-intestinal disorder, we regard Arsenicum and Apis as our two most reliable remedies, for they correspond not only to the local and immediate symptoms of the renal disorder, but to the more serious and secondary constitutional phenomena. These maladies act best at the medium and higher attenuations.

ASPARAGUS-OFFICINALIS.—*Symptoms.*—Drowsiness, lassitude, and dullness of intellect. Rapid and irregular pulsations of the heart, worse on exercise. Oppression of breathing, aggravated by exercise. Slight pains in the kidneys, felt mostly during the afternoon. Emission of a small quantity of pale, yellow urine, which soon becomes turbid and filled with a whitish dust, which settles after a few hours, leaving the urine clear: after the vessel has been emptied and rinsed, a fatty substance was observed to adhere to its walls. Urine abundant, limpid, and exhaling an odor *sui generis*. Frequent and painful micturition.

Pathology.—See page 35, this Volume.

Clinical Remarks.—This drug possesses but few symptoms which correspond to this form of the affection. In the few instances where it has apparently afforded some relief, it has been employed in from the third to the twelfth dilutions.

ASTACUS-FLUVIATILIS.—*Symptoms:* face and eye-lids puffed, great prostration of strength, and slight delirium. Drowsiness and tendency to stupor—internal coldness, great sensitiveness to the open air. Trembling in the right renal region. Sudden tearing pain in the right renal region, when sitting down. Emission of a large quantity of pale, yellow, and acid urine. *Urine containing much albumen.* Urine of a deep-yellow color and leaving a deposit.

Clinical Remarks.—We have prescribed it with benefit in one case of chronic albuminuria, which appeared to be connected with gout and

chronic eczema. A persistent use of the sixth dilution of this remedy for a period of four weeks, twice daily, appeared to ameliorate all of the symptoms.

DIGITALIS-PURPUREA.—*Symptoms:* paleness of the face; general paleness of the skin. Anasarca. Emaciation of the body. Puffiness of the cheeks and lips. Dull, heavy pain in the head; difficulty of concentrating the mind; pressing or burning pains in the vertex or forehead; vertigo and trembling; drowsiness or lethargy; uneasy, unrefreshing sleep; sleep disturbed on account of frequent desire to urinate. Great weakness. White fur upon the tongue; nausea, vomiting; ptomaine; burning, or lancinating, or pressing, or spasmodic pains in the stomach; sense of great weakness in the stomach. Contractive, or pressing, or cramp-like pains in the abdomen; ascites; diarrhoeic stools. Pain in the region of the kidneys as if bruised, when stooping or moving about. Frequent desire to urinate during the night; excessive emission of small quantities of watery urine; frequent and copious emission of watery urine. General dropsy with hypertrophy of the heart, and other organic affections of the heart. Dropsy of the chest. Ascites. Ascites and anasarca with organic affections of the heart. Rapid and difficult respiration on exercising. Asthmatic respiration on walking. Pulse frequent, or slow and weak. Involuntary twitchings of the fingers, thumbs, and other muscles of the body. Spasms. Convulsions.

Pathology.—See Digitalis, p. 38, this Volume.

Clinical Remarks.—It is supposed to be especially useful when there is a tendency to waxy or fatty degeneration of the kidney. When the renal disease is associated with an organic affection of the heart, it is often an indispensable remedy. It is supposed to operate favorably in patients of scrofulous dyscrasias, or in those who have been enfeebled by injudicious allopathic medication.

KALI-HYDRIODICUM.—*Symptoms:* face pale and swollen; œdema of the eye-lids. General feelings of *malaise*. Frequent attacks of dullness and heaviness of the head. Restless, confused sleep. Burning pains in the pit of the stomach. Dry hacking cough, with rapid and oppressive breathing. Pleuritis. Bruised pain in the small of the back, particularly troublesome at night. Darting pains in the small of the back when sitting. Painful urging to urinate. Nightly urination. Frequent and copious emission of pale and watery urine. Discharge of mucus from the urethra. Diminution of the red globules of the blood. Emaciation.

Pathology.—See page 40, this Volume.

Clinical Remarks.—Especially appropriate in renal disorder consequent upon chronic rheumatism, or gout, or which appears to be connected with constitutional syphilis, mercurial cachexia, or scrofula. It

is more frequently indicated in the stage of inflammatory exudation, than in the acute stage. Its action upon the exudated matter is such as to promote its absorption, and upon the obstructed tubuli, to restore their impaired function.

KALI-NITRICUM.—*Symptoms:* drowsiness; heaviness, pressure, and dull pains in the head. Gastric and intestinal derangements; foetid breath. Sudden swelling of the body, neck, and thighs. Oppressed breathing on ascending a stairs; violent palpitation of the heart, and dyspnœa in the night, when lying on the back, or on the right side, or when moving about quickly. Pain in the small of the back in any position—constant, or in the morning on waking, or in the evening, or during the night, of a bruised, or pressing, or cramp-like, or burning character. Spasmodic, painless jerkings of the fingers and hands. Pulse below the natural standard. Frequent emission of a pale, turbid urine; increased urine with reddish deposits, or with a mucous sediment; urine of a specific gravity varying from 1030 to 1040.

Clinical Remarks.—This is certainly a valuable remedy against the distressing paroxysms of oppression of the chest, and difficulty of breathing, which so often afflict patients suffering under granulated kidney. But it does more than afford relief to the dyspnœa, and other symptoms arising from dropsical accumulations; as several physicians have observed that patients have occasionally been permanently benefitted after the use of the remedy. Its best effects will be derived from the medium and higher attenuations.

MERCURIUS-IODATUS.—*Symptoms:* face pale, waxy, and chlorotic in appearance. General anasarca. Paleness of the skin; dryness of the skin. Irritation and ulceration of the mucous membrane of the air-passages. Foetid breath; putrid or coppery taste. Paroxysms of rapid and difficult breathing, and pleuritic pains in the chest. Nausea; vomiting; eructations; bilious diarrhoea; dysenteric discharges from the bowels. Scrofulous degenerations of the glandular system. Morbid excitability of the nervous system. Dull pains in the renal region. Urine either increased or diminished in quantity, and of high density.

Pathology.—See page 41, this Volume.

Clinical Remarks.—Owing to the paucity of pathogenetic observations, physicians have been obliged to employ this medicine more or less empirically. In my own practice, I have regarded its pathogenesis as similar to that of the other mercurial preparations, and have prescribed it in accordance with this general resemblance. This mode is neither scientific nor accurate, but the good results I have observed from the remedy have induced me to persist in its use. That it exercises a special control over this condition of inflammatory exudation, modifying favorably both the morbid state of the kidneys themselves and of the blood, and thus ameliorating, and in some instances curing

the totality of the symptoms, we entertain no doubt. Indeed, we believe it to be equal, and, in some cases, superior in value to Arsenicum, Apis, or corrosive Mercury; and it is highly probable that future experimenters will confirm this opinion pathogenetically, pathologically and therapeutically.

MERCURIUS-SUBLIMATUS-CORROSIVUS.—*Symptoms:* pale, waxen color of the skin of the entire body; paleness of the face; bluish paleness of the face; puffiness of the face; swelling of the head and face; anasarca of the face and limbs. Deranged digestion: nausea; vomiting, and burning pains in the stomach; foetid breath. Shortness of breath; excessive dyspnoea; palpitation of the heart. Disposition to stupor; transitory soporous conditions; headache. Spasms in all the limbs. Urine increased in quantity, light, and albuminous; urine scanty, red, and albuminous; suppression of urine.

Pathology.—Kidneys enlarged, soft, and somewhat congested.

Clinical Remarks.—The marked specific action of this medicine upon the kidneys, its power in promoting absorption of oxidated matters into the renal tissues, and its influence as a modifier of the morbid action peculiar to this stage of Bright's disease, render it a highly appropriate remedy. For the reasons adduced when alluding to this drug, we advise the employment of the medium attenuations.

MERCURIUS-SOLUBILIS.—*Symptoms:* general paleness of the face and of the skin; white, clay-colored face. Puffiness of the face. Drop-sical swellings of the feet and legs. Drowsiness during the day, and sleeplessness at night. General weakness, languor, and lassitude. Tongue covered with a white fur, and somewhat swollen. Foetid smell from the mouth; nausea increased by eating; bitter vomiting; great pain at the pit of the stomach, worse when pressed upon. Ascites; shortness of breath, and dyspnoea, especially on ascending a stairs, or on walking. Bruised, or stitching pain in the small of the back. Spasmodic twitchings of the fingers and hands. Frequent desire to urinate, with scanty discharges; frequent urination during the night; urine turbid even while leaving the urethra, and depositing a sediment; flocculent discharges at the end of urination. Symptoms worse during the night.

Pathology.—The morbid renal alterations induced by this mercurial, are probably similar to those of Mercurius-sublimatus-corrosivus—enlargement, softening, and slight congestion.

Clinical Remarks.—Chiefly applicable in syphilitic, hepatic and diarrhoeic or dysenteric complications; but quite secondary in importance to the two preparations last described.

MERCURIUS-VIVUS.—*Symptoms:* face lead-colored and bloated. Ptyalism, exhaustion, delirium, convulsions and death. Bad digestion; putrid breath; nausea; vomiting; white, aphous-like fur upon the

tongue, extending to its under side. Debility, languor, pains in the limbs, emaciation. Dull pains in the small of the back on walking, or lifting any thing.

Pathology.—Probably like Mercurius-corrosivus, it is capable of giving rise to enlargement, softening, and congestion of the kidneys; but there are not a sufficient number of facts at the present time to enable us to determine its precise pathological relations with these glands.

Clinical Remarks.—This medicine has been found useful in chronic albuminuria of children, complicated with marasmus and bowel affections, or with constitutional syphilis. In a few cases of this kind it has appeared to ameliorate the morbid group with more promptness and certainty than the other forms of mercury. If the little patients are emaciated, weak, languid, without appetite, and troubled with bilious or dysenteric discharges, it will be certain to afford relief.

TEREBINTHINA.—*Symptoms:* face pale and sunken. Anasarca; ascites; general dropsy. Stupor, and deep sleep; confused and languid on waking; relieved by copious and rapid micturition. Increased menstruation. Dyspnoea; difficulty of breathing, with a sense of congestion of the lungs. Sensation of heaviness and pain in the kidneys; pain and sensation of increased warmth in the loins; pressure in the kidneys when sitting, and going off during motion; aching pains in the left kidney; drawing or burning pains in one or both kidneys, extending to the hips. Urine clear, watery, and profuse; enuresis; urine of a wine color, of the odor of violets, and depositing a thick, muddy, light-yellow sediment; urine depositing a slimy sediment twelve hours after micturition. General languor and loss of strength.

Pathology.—See page 43, this Volume.

Clinical Remarks.—Several distinguished homœopathic physicians have commended this medicine highly in both the first and second stages of Bright's kidney. We have found it most serviceable in those cases which appear to have been associated with chronic irritations at the neck of the bladder, strictures, and irritable bladder.

4. NEPHRITIS SIMPLEX.—INFLAMMATION OF THE KIDNEYS.

DIAGNOSIS.—Inflammation of the kidneys commences with the ordinary febrile symptoms, like slight chills, hot and dry skin; thirst; frequent and hard pulse, either accompanied from the first, or speedily succeeded by deep-seated, aching pain in the region of the kidneys, which soon becomes acute and pulsative; urine scanty and high-colored; entire inability to lie upon the healthy side, or upon the stomach; position mostly upon the back when reclining, or on the af-

fected side, with the dorsal and lumbar muscles flexed; inability to lie on the diseased side with the muscles extended; severe pains upon rising up to the erect posture, or from the concussions arising from riding, walking, or running. When the disease is strongly pronounced, there are: absolute inability to walk, or even to stand upon the feet; pressure over the inflamed kidney does not cause pain, but any motions which call into exercise the deep-seated dorsal or lumbar muscles excite acute pain; the inflammation generally attacks the left kidney; both kidneys are rarely affected at the same time in the first instance; the pain at first is aching, compressive and dull, but often becoming, in severe cases, violent and lancinating; the pains extend along the ureters to the bladder, or follow the spermatic cord to the testicles; the urine is very scanty, bloody, purulent, or red, or watery; constant desire to urinate; there are nausea, eructations, vomitings, flatulence, constipation; pains in the rectum from contiguous sympathy; tenesmus; swelling and heat over the affected side, when complicated with calculi; there will be retraction of the testicle, numbness of the thigh, anxiety and more severe constitutional disturbance.

Nephritis may readily be distinguished from lumbago, inflammation of the psoas muscle, and neuralgia by the character and direction of the pains, which follow the ureters to the *vesiculae seminales*, or the spermatic cords to the testicles; also by the nausea, vomiting, constant desire to urinate; the partial and in some cases almost entire suppression of the urinary secretion; the sympathetic pains in the rectum; and the increase of pain whenever any of the muscles which bear upon the kidneys are extended.

The terminations of nephritis are resolution, suppuration, induration, scirrhus, or gangrene. The duration of the acute stage is usually from six to nine days, when one of the above terminations usually obtains.

Its termination in resolution is indicated by a gradual return of all the functions to a more healthy state; increased secretion of urine, which deposits an abundant sediment; moderate and general perspiration; subsidence of the pains; ability to lie on either side, or to walk without difficulty.

When suppuration has taken place, the pains become less severe; there are chills or shiverings; dull throbbing in the region of the kidneys; sometimes appearance of pus in the urine; a sensation of numbness and weight in the affected side; a partial subsidence of the febrile symptoms; and occasionally an abscess which may be recognized by swelling and fluctuation in the part.

The purulent matter may be discharged by the ureters into the bladder, or find its way between the lumbar or internal crural muscles, to the thigh, or it may find its way by ulcerations into the cavity of the spleen, the liver, or the colon, or it may burst externally.

In these cases fistulous passages are apt to remain for a long period giving issue to the pus and urine.

In a very few instances, after the acute symptoms have subsided, there remains a chronic *induration* of the kidneys, which in the end degenerates into a true *scirrhous*. In other rare instances, when the inflammation has been exceedingly violent, and suitable remedial measures have not been employed, the vitality of the part becomes destroyed and *gangrene* is the result. The occurrence of gangrene is recognized by the pale, sunken, and death-like expression of countenance, cold, clammy sweats, universal prostration, constant vomiting, delirium, small and frequent pulse, absence of pain, hiccough, and dark and foetid urine. Whenever either of the last-mentioned occurrences take place, no hopes of cure should be entertained.

CAUSES.—External injuries; strains from violent exercise or lifting heavy weights; the irritation of calculi in the kidney; sudden check of the perspiration from cold; abuse of medicinal or poisonous substances which operate specifically upon the kidneys.

TREATMENT.—Frequent external applications of cold water over the inflamed kidney will be of great service in reducing the superfluous animal heat, and thus allaying the inflammation. The water should be applied quite cold and repeated until the temperature of the part is permanently diminished, and the pain has in a measure subsided.

The specific medicines are: *Cantharides*, *Cannabis*, *Tussilago-petus*, *Aconite*, *Copaiwa*, *Terebinthina*, *Belladonna*, *Arnica*, *Nux-vomica*, and *Pulsatilla*.

As soon as we are called to a case of nephritis we should have immediate recourse to *Aconite*, either alone or in alternation with one of the other species, and continue it until the febrile symptoms have subsided. In slight cases *Aconite* alone as an internal remedy, together with thorough external applications of cold water will suffice.

If the inflammation be of a severe grade, and there are tearing, drawing, and pulsative pains in the region of the kidneys, extending to the bladder and testicle, constant desire to urinate, scanty secretion of high-colored urine, inability to lie on the affected side, tenesmus, colic-pains, urine tinged with blood, painful micturition, *Aconite* in alternation with the third dilution of *Cantharides*, or *Cannabis*, or *Terebinth*, or *Tussilago-petus*, or *Bals.-Copaiva* may be exhibited.

Tartar-emetic.—Sharp stitches in the region of the kidneys, burning from the rectum through the urethra, violent pressure in the bladder, scanty emission of urine slightly tinged with blood, accompanied with pain in the bladder, inflammatory red urine, depositing bloody red filaments when standing; dark turbid urine, watery urine with mealy sediment; urine leaving white spots (antimonial urine); increased secretion of urine; burning after micturition. Very severe, lancinating

pain in the lower part of the bladder similar to that caused by calculous affections (third day). Severe burning in the urethra after urinating (third day); wakes in the night with great thirst and urgent desire to urinate, but passes but little urine. (Second night.)

Tartar-emetic in acute cases of Nephritis equalizes the circulation, subdues inflammatory action, and restores the functions of the skin.

Mercurius.—In a case in which Nitrate of Mercury was rubbed on the hip and thigh, Professor Syme* says: “intense pain immediately followed, and afterwards shivering; the urine was suppressed five days, without any insensibility, and during its suppression urea was detected in the blood; ptyalism appeared on the third day, became very profuse, and was followed by exfoliation of the alveolar portion of the lower jaw.” Recovery took place slowly. (See p. 64, this Volume.)

Apis-mel..—In a case of œdema of the left leg, with inflammation of the lymphatics, which were hard as cords, and tender to the touch, improvement was speedy, and manifested by increased flow of urine—a sign that denotes the curative action of Apis. The cure was complete.

In a case of amenia, in which the periodical flow had been suppressed for five years: rush of blood to the head, with delirium, occasionally; the urine had been deficient for five months; œdema, dyspnoea. After taking Apis the flow of urine was at once increased; the œdema was lessened; the dyspnoea relieved. The catamenia appeared for three hours; the medicine was suspended till the time for the next period, when the discharge occurred black and clotted. The next time it was nearly normal, and her general health was much improved.

Arnica is suitable for inflammation of the kidneys caused by external injuries, concussions, sprains from lifting, &c.

When there is reason to suspect that suppuration is about commencing, *Sulphur*, *Sepia*, and *Lycopodium* may be used with advantage.

Nephritis can sometimes be cured by *Aconite* alone. In all cases this medicine should be kept in view, since the local phenomena are usually accompanied by a violent fever. (*Kreussler, Therap.*, p. 105.)

5. HÆMATURIA.

Hæmaturia is a common result of effort to throw off by the kidneys morbid matters from the blood. The organs whose office it is to depurate the blood are the epithelial cells, which line the uriniferous tubes, and which surround the Malpighian tufts of the kidney.

Most physiologists believe that certain toxic elements contained in the circulation and brought by the blood to the kidneys are liable to produce disease in them. (*Trans. Med. Chir. Soc., London*, 1857.)

* Edinburgh Med. and Surg. Jour., Vol. XLIV.

Thus Mr. Simon, in a paper "On sub-acute inflammation of the kidney," calls attention to the fact that to task these organs with the elimination of zymotic causes from the blood may give rise to structural disease in them, and indirectly account for the presence of abnormal elements in the urine. He says: "The morbid material which thus stimulates the kidney in its struggle for elimination will sometimes consist of products of faulty digestion—the lithates or the oxalates sometimes of matters cast upon the kidney in consequence of suppressed function in other organs—the skin or the liver; sometimes it will be the mysterious ferment of a fever poison—typhus, or scarlatina. The following conclusions have been reached by pathologists:

1. That the kidneys are designed to depurate the blood, not only of those post-organic and saline elements of the urine which would prove deleterious if they were retained in it, but also to eliminate certain morbid poisons which serve to infect the blood and give origin to the class of zymoses.

2. That among those of the latter class each poison, to whose action the kidney is susceptible, impresses that organ in its own peculiar manner, invariably causing its own especial variety of structural and functional lesion.

TREATMENT.—*Arsenicum.*—Case by Dr. Fraser, of Hull.—A man of previous good health and constitution, some days after a feverish attack with some eruption on the skin, complained of painful micturition, scanty secretion, slight œdema of the face. Antiphlogistics and diuretics failed to arrest these symptoms.

Pain in the back; headache; nausea; loss of appetite; dry, harsh skin; parched mouth; little thirst; constipation; urine scanty, and containing blood-globules, albumen, fibrinous casts and various forms of epithelia.

R. Tr. *Arsenicum Album* 3°. 20 drops.

Spts. Vin.	q. s.
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Water	6 oz.
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Mix. Take a table-spoonful every four hours.

Next day no improvement; can not lie down; restless and uncomfortable; difficulty in breathing; short, rapid respiration; dropsy increasing; urine very red; secretion in twenty-four hours eight ounces; microscopic appearance the same.

Fourth day.—Dropsical condition the same; general symptoms slightly alleviated; urine increased to twelve ounces; its color deep-brown, smoky, as in ordinary hæmaturia; contains less albumen; blood casts not so perfect in outline as before; casts of the tubuli and epithelial cells more altered, broken as if indicating the arrest of further extravasation. The medicine continued.

Sixth day.—The patient can dress himself and move about with

comfort. Quantity of urine increased to twenty-five ounces in twenty-four hours. Three days later the improvement was plain. Appetite good, bowels regular; sleep good; swelling rapidly disappearing; quantity of urine increased to two quarts in twenty-four hours. The urine containing much less albumen; its specific gravity 10·15, and containing uric acid.

Twelfth day.—No constitutional disturbance whatever; urine has only a slight brownish tinge. Sp. gravity 10·16, quantity above two quarts in twenty-four hours.

Sixteenth day.—Urine has only a very slight shade, produced by heat and Nitric-acid. The few casts that appear under the microscope quite transparent.

Twenty-first day.—Secretion of urine reduced to forty ounces in twenty-four hours. Dropsey quite gone; patient can walk out daily.

Twenty-ninth day.—No trace of albumen in the urine; no blood-discs or casts discovered.

Symptoms which led to the selection of Arsenicum in this Case.—Leucophlegmatic temperament of the patient; general restlessness; uncomfortable feeling; parched condition of the mucous membrane, unattended by increase of thirst; condition of the urine, and frequent scanty micturition. The action of remedy seemed not so much on the kidney as on the general condition of the absorbents.

Case by Dr. Henderson.—*Terebinth.*—A married woman, having haematuria for four days, took one-twelfth of a drop every four hours. In twenty-four hours the sanguine appearance in the urine was quite gone, but there was much irritability of the bladder, pain in the region of the kidneys, and shootings down the limbs. Several weeks afterwards she had a return of the disease caused by indiscretion in diet, &c. She was directed to take one-hundredth of a drop of Turpentine for a dose every few hours. The effect on the secretion was slower; it took five days to overcome the morbid state, but, then, no painful consequences were produced by the weaker doses.

6. HÆMATURIA FOLLOWING SCARLATINA. (See Vol. I., p. 600.) From Pulmonary Ædema. (See Vol. I., p. 785.)

7. DISEASE OF THE KIDNEY CAUSED BY SURGICAL OR MECHANICAL LESIONS.

Claude Bernard (*Lect. III.*) says: "If you simultaneously remove the two kidneys of a dog, or simply tie the renal arteries, you immediately produce a general disturbance in the entire economy. The animal is powerless in expelling the excremential product which should pass off by this channel, and the whole system becomes gradually poisoned. At first the animal is not seriously affected; it continues to eat and

digest its food for a certain lapse of time, which corresponds to the period of incubation in diseases; at a later time it is attacked with vomiting and purging, shortly after which it dies.

"What takes place in a case like this? Let us endeavor to explain it. During the first period the urea, which can no longer be eliminated by the kidneys, is expelled by the intestines. It is found, together with the salts of ammonia in the animal's excrements, and even in the gastric juice. If this new mode of elimination could be prolonged indefinitely the animal would not become diseased—it would not die; but very soon the mucous membrane of the intestines, irritated by the constant contact with the ammoniacal salts, undergoes morbid changes. On the other hand, as long as the urea is eliminated by the intestines, it does not find its way into the blood. This fact has been demonstrated experimentally by M. M. Prevost and Dumas, who have not, however, succeeded in explaining it. Now at a later period, when the mucous lining of the intestine refuses to continue this function, which is altogether foreign to it, the urea finds its way into the blood, and the animal soon expires, comatose and convulsed.

"When the cessation of urinary secretion depends on the ligature of the renal arteries, this state of things may sometimes be obviated by removing the ligatures; the self-same thing would also take place in man, if there existed an obstacle to the passage of the urine, and if it were possible to remove that obstacle; but in all cases in which the kidneys have been removed death has always supervened. The destruction of the animal has been the invariable termination of the morbid series. Here then, we have a disease which can be artificially produced.

If you remove only one kidney, the animal continues to live; the remaining organ becomes enlarged, and plays both its own part and that of its fellow. If you only make a division of the nerves of the kidneys the animal dies. During the first few days which follow the operation albuminuria is produced, shortly after, inflammation of the kidneys begins. These organs then mortify and become decomposed; so that finally, they act on the economy like a septic poison, which inevitably leads to death. Such I consider to be the natural explanation of this *apparently mysterious fact.*"

8. CAPSULA RENALE.—ADDISON'S DISEASE OF THE SUPRA-RENAL CAPSULES.

LEADING CHARACTERISTICS.—Anæmia, general languor and debility, remarkable feebleness of the heart's action, irritability of the stomach, and a peculiar change of color in the skin, occurring in connection with a diseased condition of the supra-rénal capsules.

GENERAL REMARKS.—The disease displays its characteristic features very slowly: the patient gradually fails in health; he becomes languid and weak, indisposed to bodily or mental exertion; appetite impaired or lost; whites of the eyes become pearly; pulse small and feeble; or, if large, excessively soft and compressible; the body wastes, but without exhibiting the dry and shrivelled skin and extreme emaciation common in malignant diseases; slight pain or uneasiness in the region of the stomach; occasional vomiting; sometimes disturbed cerebral circulation. These symptoms are common in anaemic diseases; but they do not point to the seat of the local affection, and throw no gleam of light on the real nature of it. We may expect some malignant or strumous disease; but we find no enlargement of the spleen, thyroid, thymus, or lymphatic glands, no evidence of renal disease, of purpura, previous diarrhoea, ague, or exposure to malaria. But, in connection with the above symptoms, we observe a most remarkable and characteristic discolouration of the skin, which has attracted the attention of the patient and friends. It pervades the whole surface of the body, but is commonly most conspicuous on the face, neck, superior extremities, penis, axilla, and around the navel. The color is peculiar, being dingy, smoky, with various tints or shades of deep amber or chesnut brown. In one instance the skin was so universally and deeply darkened as to resemble that of a mulatto.

In some cases the discolouration occurs in patches, or the surface presents a mottled or speckled appearance, in one instance being interspersed with whitish spots. This irregular distribution of pigment-cells, in some cases, is observed in internal tissues, as the peritoneum, mesentery, and omentum.

In the progress of the disease the discolouration of the skin increases; the anaemia, languor, failure of appetite, and feebleness of the heart become aggravated; a darkish streak appears under the commissure of the lips; the body wastes, but without extreme emaciation or dry harsh condition of the skin; pulse smaller and weaker; without special pain or uneasiness the patient gradually sinks and expires. In one acute case, in which both the supra-renal capsules were found universally diseased, on dissection, the mottled appearance of the skin was very manifest, the anaemia and gastric derangement were very strongly marked; but the pulse was not small and feeble as usual, but was large, soft, and extremely compressible, and jerking on the slightest exertion or motion, and the patient soon died. Mr. Addison, from whose elaborate descriptions we have condensed this view of this little known disease, proposes by the concurrence of the above symptoms, to distinguish the destructive disease of the supra-renal capsules; and he asserts that, whether the disease be acute or chronic, it will inevitably

terminate in death when the lesion involves the destruction of both organs. (pp. 4 to 7.)

DIAGNOSIS.—The distinctive features are the peculiar discoloration of the skin. Mr. Hutchinson, in furnishing an analysis, of twenty-seven cases (*Med. Times and Gazette*), says *jaundice* may be discriminated from the bronzed skin caused by disease of the supra-renal capsules, by its own peculiar tint, by its uniform diffusion, by its presence in the matrices of the nails and in the conjunctive. *Browning from exposure to the sun* may be recognized by its occurrence in those situations only which are habitually exposed.

Patches of pityriasis versicolor sometimes resemble those of bronzed skin. They are distinguished by "their limitation to the abdomen and chest, their defined outline, their furfuraceous surface, the slight itching which attends them, their contagious character, and, above all, the microscopic examination of the cuticle." (*Med. Times and Gazette*).

The *bronzed color* resembles that of a bronzed statue from which the gloss has been rubbed off, and is not changed by pressure. The extreme and peculiar feebleness is the next most striking symptom. The patient is liable to faintings, loses energy, is unable to exert either body or mind; flabbiness of the muscles rather than extreme emaciation.

CAUSES.—No others have yet been pointed out than those which usually originate general chronic disease, disease of the kidneys or spine, though none of these diseases seem necessarily connected with the bronzed skin or the peculiar debility.

PATHOLOGY.—The diseased conditions of the supra-renal capsules hitherto observed in connection with the *bronzed skin* are: 1. Acute and recent inflammations, ending in abscess; 2. Atrophy, with fibro-calcareous concretions; 3. The conversion of the viscera into a sort of fibroid structure, with great enlargement and induration; 4. The deposit of tubercle, or of a fibroid material resembling tubercle; 5. The growth of cancer. Sometimes the affection of the glands, especially of a cancerous nature, is secondary to disease in other parts; but it is observed that in many cases these organs were the only part of the body in which the disease was detected. When the disease of these glands is only partial, the severity of the general symptoms and the bronzing of the skin are all proportionate to the *amount* of the disease in these bodies, but have no relation whatever to the *nature* of that disease. (*Hutchinson*.)

It is not yet sufficiently demonstrated whether the disease in one of the organs is the cause of the morbid changes in the other, and of the general symptoms; or "whether the supra-renal disease and the affection of the skin, like the intestinal ulceration and cutaneous rash of

typhoid fever, are concurrently the efflorescence of some more deeply-seated mischief." (*Brit. and For. Med. Chir. Rev.*, Oct., 1856, p. 318.) From the researches, then, of Mr. Addison and others, it seems to be proved that there is an intimate connection between the disease of the capsules and the morbid condition of the skin; that such a condition of the skin as has been already described "is diagnostic of the disease of the supra-renal capsules," and "that disease of the supra-renal capsules is the cause of that discoloration of the skin, and, we may add, of the symptoms that co-exist therewith."

PROGNOSIS.—Such a large proportion of all the published cases of this disease have terminated fatally, that we can scarcely be justifiable in holding out assurances of recovery in any case in which the *bronze-colored* skin and the accompanying debility are strongly marked. In cases less clearly defined in their nature, and not advanced to a hopeless degree, it may still be found curable.

The most efficient remedies hitherto employed are, *Apis*, *Arsenicum*, *Bryonia*, *Mercurius-corr.*, *Terebinth*, *Apocynum*, *Hellebore*, *Kali-hyd.*, *Cantharis*, *Thuja*, *Buchu*, *Uva-ursa*, *Cubebs*, *Cuprum-aceticum*, *Gallic-acid*.

The best effects have been observed from the lower attenuations of these medicines, repeated at long intervals.

9. CYSTITIS.—INFLAMMATION OF THE BLADDER.

DIAGNOSIS.—Inflammation of the bladder commences like nephritis, with shiverings or chills; frequent pulse; hot and dry skin; anxiety; thirst; urine scanty and high-colored; nausea; vomiting; eructations, and constipation. In a short time the patient experiences deep-seated lancinating pains in the hypogastric region; frequent desire to urinate, each effort giving rise to increased pain, great anxiety, and uneasiness. As the inflammation extends, the pains become more severe, and there are painful pulsations, a continual burning sensation in the bladder, with acute pain on making pressure in the vicinity of the inflammation, and when attempting to urinate, a sense of weight in the hypogastric region; acute or dragging pains in the loins, the ureters, the perineum, and the anus; swelling and distention of the abdomen; great difficulty in voiding the faeces, on account of the sympathetic inflammation of the rectum; all movements of the muscles which bear upon the bladder excite increased pains; and finally rigors, cadaverous expression, cold extremities, delirium and convulsions. If the inflammation be confined to the neck of the bladder, there will be an almost entire suppression of the urinary discharge; constant ineffectual and exceedingly painful efforts to urinate; and violent pain in the perineum. If the ureters become involved, pains are frequently felt as high as the kidneys; the

secretion of urine becomes more deranged, the suppression is more decided, and the attempts to void the urine still more painful. When the whole interior surface of the bladder is affected, the urine is red and tinged with blood, and a severe burning and throbbing is experienced. Occasionally the external surface of the organ becomes inflamed, either on one side, on its anterior or posterior, or its superior or inferior part; in which case the symptoms will be in correspondence with the location of the malady.

Cystitis may terminate in *chronic inflammation of the bladder*, in *resolution, suppuration, or gangrene*.

The signs which indicate these different terminations are similar to those described under *Nephritis*.

CAUSES.—Injuries resulting from childbirth, from the use of instruments during accouchement; from blows, concussions and falls; from gravel, stone, abuse of diuretics, metastasis of erysipelas, rheumatism, or gonorrhœa, the use of stimulating injections into the urethra, prolonged retention of urine, introduction of catheters or sounds into the bladder, suppression of the menses, and extensive inflammation (spreading) from neighboring parts.

TREATMENT.—*Aconite*, *Cantharides*, *Cannabis*, *Thuya-occidentalis*, *Terebinthina*, *Copaiba*, *Tussilago-farfar*, and *Asparagus* are our best specifics. They may be employed at the first, second and third attenuations, either alone or in alternation with *Aconite*: and the doses repeated as the urgency of the symptoms demand.

Aconite.—In the dysuria and fever which accompanies cystitis, especially when it is of a synochal character, repeated doses of *Aconite* are indispensable. (*Hartmann, Ther. Homœop.*)

Cases of ordinary cystitis, says *Hering*, "with painful and very scanty micturition, or rather the discharge of a few drops only, of deep-red, turbid urine, &c., can almost always be cured with *Aconite*, especially in women and children, and by repeating the dose whenever the pain recommences. We ought always to consider *Aconite* when with urinary tenesmus and pains in the bladder, this region is swollen, with aggravation of the pains on urinating, urine of a blood-red color, or mixed with small clots of blood. (*Domestic Med.*)

Schwarz gives a case of a man aged thirty, with firm muscles, and black hair, who after wetting his feet experienced the following symptoms: violent chill and afflux of blood to the head, with extreme pain immediately under the symphysis pubis, as well as behind and beneath the scrotum; continual and urgent desire to urinate; urine burning, red, mixed with blood, and only emitted drop by drop; pubic region tense, painful to the touch, and a little hot; burning lancinating pain extending to the base of the urethra; disagreeable sensation at the meatus urinarius, decided fever; pulse a little full, hard, 115 per minute;

tongue red and dry; skin dry and hot. Aconite 18th, one drop every three or four hours. At the end of twenty-four hours there was a decided remission of all the symptoms. Pulse 95. Inflammation visibly diminished, urine less red. On the third day the pulse was 75, and there was no fever. The few remaining symptoms were cured by pulsatilla. (*Exper. Hom.*, p. 95.)

SYMPTOMS PARTICULARLY INDICATING ACONITE.—Vesical region swollen and painful; *urinary tenesmus*; *urine scanty, red, bloody* and only emitted drop by drop; aggravation of the pains on urinating; strong inflammatory fever. (*Jahr.*)

In *cystitis* as well as in nephritis Aconite may be employed with success; for, although the principal indication for this remedy is the violent fever which accompanies the local affection, yet it acts with equal efficacy upon the latter. It often suffices to cure the entire affection. (*Kreussler, Ther. Hom.*, p. 111.)

TRITICUM REPENS.*—*Inflammation of the Bladder* produced by inflammation of the prostate and neck, in pain and spasms from calculus and stricture. In all of these painful affections, Triticum-repens is a useful remedy. We usually employ the tincture in water.

10. D Y S U R I A.

DIAGNOSIS.—In this complaint the urine can be voided at will, but it usually passes away in a small spiral or divided stream, or drop by drop, each act being attended with burning and cutting pains at the neck of the bladder. There is a frequent inclination to urinate, and sensations of pressure and tenesmus, which constantly urge the patient to void his urine. The inflammation is confined to the neck of the bladder, and does not often give rise to constitutional disturbance.

CAUSES.—Perhaps the most common cause of dysuria is the absorption of *Cantharides*. This substance exercises a specific influence so decidedly upon the neck of the bladder, that even a sufficient quantity may be absorbed from the external application of blisters to cause the malady. A family was poisoned by a servant, who put a tea-spoonful of Cantharides powdered into a quantity of ground coffee; and they all suffered for several days. A medical student took five or six pills of blistering plaster in the course of a day or two for gonorrhœa. Severe dysuria, with excessive burning in the urethra ensued and increased till the urine could only be voided drop by drop, and a small quantity of blood was mixed with it; after the pills were discontinued the suffering gradually subsided.

SYMPTOMS OF CANTHARIDES.—Retention of urine with ineffectual ef-

* Known to farmers as Dog's-grass, Couch-grass; grows two feet high, with stem trailing at the lower joints.

forts to urinate, is one of the most common and painful evils which *Cantharides* produces. It ought therefore to be a salutary homœopathic remedy. Hahnemann enumerates all the preceding authors who had tried it and shows that they all found it successful, though Huxham read the *theories* of the schools against it, and dared not try it. The painful micturition, scalding urine, and inflammation of the urethra are the symptoms of the early stage of dysuria.

Nitrate of Potash.—In small doses it causes frequent desire to pass water, accompanied with pain and heat. When this condition exists as a consequence of disease or absorption of cantharides from a blistered surface, a dilution of Nitre is found to be a remedy.

Other causes are, stimulating injections, abuse of stimulants and condiments, onanism, extension of gonorrhœal inflammation, cold, turpentine, worms in the rectum; gravel, and calculi.

TREATMENT.—*Camphor* is the specific against dysuria caused by the absorption of *Cantharides*. When it arises from other causes, *Cannabis*, *Uva-ursi*. Scovolo, among many others, cured a case where the urinary discharge was puriform, by *Arbutus-uva-ursi*; which never could have been performed, if this plant had not the property of exciting heat in the urethra with discharge of mucous urine.

Belladonna.—Its effect on the urinary mucous membrane.—It causes frequent, painful, and scanty micturition, sometimes going on to strangury and haematuria; urine diminished in quantity, often afterwards increased. Its use in this condition extends only till actual inflammation begins; then *Cantharis* and *Therebinthina* supersede it.

Apis is a remedy of great value in dysuria.

11. IRRITABLE BLADDER.

This affection arises from long-continued inflammation, which in the end so impairs the function of the bladder that the presence of a very small quantity of urine forces it to contract, and thus forms an incontinence of urine. Although this condition of the bladder may arise from numerous causes, which have already been enumerated, it not unfrequently proceeds from extension of urethritic inflammation to this organ, and from protracted use of diuretics. The malady is readily distinguished from stone by the relief which always follows the evacuation of the bladder, while this operation aggravates the painful sensations in the latter affection.

This disease generally baffles all the resources of *allopathy*; we shall endeavor to show that the same remark is not true of the results of homœopathic treatment.

TREATMENT.—The principal remedies are, *Acon.*, *Camphor*, *Cannabis-sativa*, *Cantharides*, *Digitalis*, *Apium*, *Sulphur*, *Nux-vom.*, and

demulcent drinks, of which an infusion of water-melon seeds is one of the best.

12. SUPPRESSION AND RETENTION OF URINE.

The causes capable of giving rise to suppression or retention of urine are so various and diversified, and the circumstances attending the course and progress of different cases so numerous, that our description must necessarily be confined to the more prominent symptoms and occurrences connected with the malady.

By the term *retention of urine* we mean to include all those cases in which the urine is secreted by the kidneys as usual, but where the power to evacuate the bladder is lost; while *suppression* of urine corresponds with the affection known as *ischuria renalis*, in which the secreting function of the kidneys is either partially or totally destroyed.

Ischuria renalis is always attended with danger, from the peculiar tendency which exists in the brain to take on diseased action. When there is an entire suppression of the urinary secretion, from the paralysis of the kidneys, coma and effusion upon the brain occur very speedily. In cases of this description the saliva, the sweat, the pulmonary exhalations, the bile, the pancreating and gastric fluids, become impregnated with a fluid possessing the appearance, taste, and odor of urine. It has also been observed, that the liquid effused upon the brain, possesses a decidedly urinous smell. In cases of the disease dependent on inflammation of the kidneys, we shall have febrile symptoms, hot and dry skin, thirst, nausea, vomiting, rapid pulse, tenderness of the abdomen on pressure; swelling and pain in the region of the kidneys, frequent desire to urinate, and the passage of the small quantity secreted, causing great pain, urinous taste in the mouth, urinous odor of the sweat, anxiety and general uneasiness. If the suppression be total, the symptoms will be still more grave, and there will be early indications of serious cerebral disorder, in the form of delirium, rapidly succeeded by coma and effusion.

On the other hand, in suppression depending upon paralysis of the kidneys, the febrile symptoms may be very slight, and there may be an entire absence of pain and uneasiness in the region of the kidneys or in the abdomen, and no desire to urinate. In these instances, the danger is no less imminent than in the other variety, for fatal oppression of the brain almost invariably ensues, if the malady persists more than two days. Cases, however, are reported of almost total suppression for two or three months, in which the patients have been restored to health; but such instances are of rare occurrence, and should only be considered in the light of exceptions to the general law of the disease.

Suppression now and then occurs from the presence of calculi or

gravel in the structures of the kidneys, thus causing a mechanical obstruction to the healthy performance of their functions. In these cases the foreign bodies may operate by causing inflammation, spasms, induration or ulceration. They give rise to swelling, pains, sensation of weight and uneasiness in the vicinity of the kidneys, to numbness of the thighs, retraction of the testicles, abdominal tenderness, constipation, frequent inclination to urinate, pain and tenesmus in passing water, anxiety, irritability, febrile symptoms, nausea, vomitings, hiccoughs, pain in the lumbar region, pain and tension in the perineum, scalding in the urethra, pulse full and frequent, difficulty of breathing, sighing, delirium, convulsions. Ischuria may be distinguished from retention of urine from the circumstance, that in the latter disease the bladder is distinct, and rises up above the pubis, offering to the pressure of the hand a firm and resisting body, while in the former complaint this viscous is empty, falls down below the pubis, and affords no resistance or fluctuation.

Retention of urine may arise from inflammation, from stricture of the urethra, from paralysis of the bladder, from enlargement and inflammation of the prostate gland, from mechanical injuries to the bladder, from abuse of stimulating diuretics, from inflammation of the rectum, from the pressure of tumors, from displacement of the uterus, from calculi, from the lodgment of gravel or a stone in the ureters or in the urethra, from thickening and obstruction of the ureters, from too long-continued retention of urine, and from spasms.

The general symptoms of *retention* are, distention of the bladder, and its elevation above the pubis, pains in the region of the bladder, with pressing desire and ineffectual attempts to urinate, anxiety, general uneasiness, and more or less constitutional disturbance.

As retention is generally but a symptom of some other malady, we are often presented with constitutional disturbances during an attack in no way dependent upon this affection. We may cite as examples of this kind, diseases of the brain and spinal marrow, which may have preceded the retention for months, protracted calculous affections, chronic inflammations of the bladder and prostate gland, constitutional effects of onanism, retroversion of the uterus, and the effects of previous mechanical injuries. From these facts it is apparent that there may exist an almost endless variety of symptoms during the progress of the different cases of retention which are constantly occurring.

When the malady arises from simple inflammation of the neck of the bladder, not complicated by any previous disease, the symptoms are, hot skin; frequent and hard pulse; thirst; pain in the region of the bladder and in the perineum, increased by pressure; restlessness; anxiety; constipation; frequent inclination to pass water, with violent painful and ineffectual straining; shooting pains extending up the

ureters towards the kidneys, or along the spermatic cords towards the testicles; headache; nausea; oppression at the *præcordia*; and general feeling of fullness and distention of the abdomen.

Retention caused by *paralysis*, on the other hand is accompanied by but few of these symptoms. Indeed many cases are recorded where the accumulations of urine have reached an enormous amount before the patients were aware of it. Other instances are mentioned where the distention has been so gradual and painless as to cause it to be mistaken for ascites, and in more than one instance of this description, *paracentesis abdominalis* has been resorted to as a curative measure. In cases like these, fifteen or twenty pints have occasionally been drawn off by the catheter at a single operation. It is not an uncommon result in these over-distentions, for the bladder to become united by adhesive inflammation to the umbilicus, and afterwards to discharge itself through this part by ulceration. The same occurrence sometimes takes place into the rectum, vagina, and even into the abdominal cavity. In these cases, the danger from peritoneal inflammation and from gangrene is imminent.

Retention may arise from *spasmodic contractions* about the neck of the bladder, giving rise to most violent and painful attempts to urinate, bearing-down pains, frequent painful erections, great sensitiveness of the urethra and perineum. In this variety of retention, it is always very difficult and sometimes absolutely impossible to pass a catheter, without previously allaying the irritation by fomentations or by the employment of suitable medicines.

Spasmodic retention, although sudden and violent in its onset, is not usually a dangerous affection. The essence of the disease consists in an irritation about the neck of the bladder, and is dependent upon inflammation of the prostate of the rectum, of the urethra, or some other neighboring structure, from which it has been propagated by contiguous sympathy.

But the most difficult cases of retention with which the physician meets, are those caused by strictures of the urethra, and enlargements of the prostate gland. The practitioner during his professional career, will sometimes be called to cases of each of these maladies, where nothing but an incision into the membranous portion of the urethra, through the stricture, or the puncture of the bladder, will save life. In these cases, great judgment, decision and surgical skill are indispensable to the safety of the patient. This will be conceded when we think of the rapidity with which retention may terminate in fatal cerebral disease, ulceration and gangrene. By these observations we by no means desire to deter the physician from the employment of every medicinal means in his power, so long as they can be applied without en-

dangering the life of the patient; but there is a point beyond which we cannot safely pass without resorting to one of the operations just alluded to; and in making up a correct decision upon this point the best judgment and the highest professional knowledge are requisite. The following case will illustrate this subject: Mr. B., aged forty years, of robust constitution, had been operated upon fourteen years previously, for stricture in the membranous part of the urethra. An incision had then been made through the strictured part, a catheter introduced and allowed to remain a good portion of the time for several weeks, but for some unknown reason the opening made by the knife did not heal, and a fistulous passage was formed, through which the urine has passed for the most part of the time since that period. For two or three years previous to his coming under our care, this fistulous passage has been gradually contracting, and he experienced, at times, retention, which could only be obviated by baths, fomentations, injections, relaxing medicines, and the skillful use of the probe. Several times, however, we succeeded in relieving him of the attacks by these means; but on one occasion, being in the country, and having contracted a cold from wetting his feet, the retention recurred, accompanied with unusual inflammation and tumefaction in the fistulous tract. Persevering efforts were made by his medical attendant to allay the inflammation, relax the parts, and to draw off the water by means of catheters and probes, for nearly two days, but without success. The symptoms now becoming very urgent, he returned home and placed himself under the care of Drs. Brigham and myself. We found great distention of the bladder, constant desire to urinate, bearing-down pains in the region of the bladder, expression exceedingly anxious and care-worn, eyes sunken, mouth and throat dry, thirst, pulse rapid and feeble, great prostration, nausea, hiccup, delirium, frequent sighing, exhalation from the surface of the body of a urinous smell, coldness of the extremities, and a sluggish and unhealthy appearance at the orifice of the fistula.

After resorting to the usual remedies in such cases, and making repeated attempts with the catheter and probe, we decided, although it was then midnight, that an incision must be made through the perineum without further delay. This was speedily effected, and the patient's life thus saved, while had we delayed a few hours more, gangrene or congestion of the brain would probably have resulted.

We also have in mind a case of retention from enlargement of the prostate, which proved fatal in consequence of the absolute refusal on the part of the patient to submit to the operation of puncturing the bladder. In this instance, the swelling and inflammation of the gland were so great, together with a constant tendency to spasmodic contraction of the neck of the bladder, whenever the catheter came in contact with the part, that all efforts at introduction, aided by baths, fomentations

and relaxants were of no avail. Here a timely puncture of the bladder would have saved the patient's life.

We are well aware of the practical skill and tact necessary to effect an introduction of the catheter in these cases, and of the importance of securing the services of a skillful and experienced surgeon; but cases sometimes occur which baffle the most eminent surgeons in their attempts to pass a catheter by an enlarged prostate.

RETENTION sometimes occurs from obstruction of the *ureters* by gravel, calculi, by thickening and induration of their walls, by hydatids and other unnatural formations, by the pressure of tumors in their vicinity, and by occlusion from adhesive inflammation. The following signs indicate the existence of this variety of disease; unusual fullness, pain and sensation of weight in the vicinity of the kidneys, tension along the track of the ureters; nausea, vomiting, retraction of the testicles, pain along the spermatic cord, collapsed state of the bladder, no resistance to the introduction of the catheter; absence of urine in the bladder, and more or less constitutional disturbance. When the obstruction is complete, the ureters and the kidneys become so much dilated that urine to the amount of two or three pints sometimes accumulates in them, before congestion, ulceration, or gangrene supervene.

Retention not unfrequently arises in females from a retroversion of the uterus, from the presence within the vagina of polypi, hydatids, of scirrhouss enlargements, from injuries arising during difficult accouchemens, from the irritation caused by acrid secretions, from the presence of hardened faeces in the rectum, and from adhesion occurring between the walls of the vagina, in consequence of inflammation and sloughing of the mucous membrane.

CAUSES.—The most frequent proximate cause of retention, is *inflammation* of some portion of the bladder. Amongst the more prominent causes of this inflammation, are: metastases of gout and rheumatism, abuse of diuretics, strains, and extension of inflammation from neighboring parts.

The causes which rank next in importance are *strictures of the urethra*. They occur at all periods of life, and always require the interference of the surgeon for their removal.

ENLARGEMENT OF THE PROSTATE GLAND, is a frequent cause of retention in old men. The remote cause can generally be traced to excessive sexual indulgence in early life. This gland may become enlarged from mere inflammation and engorgement of its structure, or from scirrhouss degeneration. Affections of the prostate are usually called into activity by undue exposure to cold and wet, by abuse of stimulants and by neglect of timely urinary evacuation.

Other causes, some of which have already been alluded to, are, retroversion of the uterus, obstruction of the ureters from foreign bodies,

occlusion of the ureters from adhesive inflammation, paralysis of the bladder, from injury or disease of the brain or spinal marrow, from undue retention of urine, from mechanical injuries, from abuse of drugs, from metastases of gout, thickening of the mucous membrane of the bladder, tumors and excrescences near the neck of the bladder, repercussed eruptions, pressure upon the bladder by tumors in its vicinity, scirrhous of the bladder or rectum, accumulations of hardened feces in the rectum, suppression of the menses, phymosis, ulcers, external injuries, blows, contusions, and falls, leucorrhœa and gonorrhœa.

TREATMENT.—In all cases of suppression or retention, where there can exist a possible doubt in regard to the true nature of the case, we should avail ourselves, without delay, of the use of the catheter. If this instrument passes without difficulty into the cavity of the bladder and no discharge of urine follows its introduction, we may be certain that the cause and seat of the difficulty is not in this viscus; while, if a free discharge takes place through the catheter, affording immediate relief to the distention, pain, and other unpleasant symptoms which had previously existed, we may be assured that the bladder, the prostate gland, or some part of the urethra, is the seat of the complaint.

To ensure an accurate diagnosis, then, we in the *first* instance ascertain whether or not a catheter can be passed into the bladder.

Second.—If it can be, whether easily or otherwise.

Third.—How large an instrument can be passed.

Fourth.—If a discharge of urine follows the introduction.

Fifth.—If the operation is attended with pain.

Another important step in forming our diagnosis, consists in procuring from the patient or his friends, a minute history of his case, and every circumstance connected with the individual, which might have a bearing upon it. Thus, if we are called to an old man whose malady has approached gradually, who has had no febrile symptoms and little pain, where no resistance is offered to the introduction of a full-sized catheter, and where a large quantity of urine flows off, affording immediate relief to the uneasy feelings, we may with confidence pronounce the cause, *paralysis of the bladder*. The same law obtains in cases of retention succeeding injuries or diseases of the spinal marrow.

If we have a case where the catheter passes into the bladder with great difficulty, on account of some obstruction near its neck, we then inquire whether there exists a stricture, a spasmodic contraction of the bladder, or an enlarged prostate gland. The following circumstances will enable us to decide the question satisfactorily:

Stricture approaches gradually, as is indicated by the gradual contraction of the stream of urine, the frequent and sometimes constant presence of a gleety discharge, and a sensation, after passing water, as if a few drops still remained behind.

Enlarged prostate occurs, for the most part, in old men, is attended with pulsative pain over the bladder, weight in the perineum, constant inclination to urinate, with much straining, fever, and general uneasiness. By introducing the finger into the rectum we may often detect the enlargement by actual touch.

Spasmodic contraction of the neck of the bladder usually proceeds from inflammation of some neighboring structure, as the prostate gland, the rectum, and the urethra. Spasms of this part may arise also from the irritation of gravel and calculi. The previous history of the case will enable us to decide as to the real nature of the affection.

Retention, from stricture of the urethra, can only be permanently cured by the gradual dilatation of the contracted part by bougies. Temporary relief may sometimes be afforded by the use of medicines, but the only permanent cure is by *artificial dilatation*. But much may be done towards effecting cures in cases of diseased prostate, by a judicious employment of specific medicines. Many cases of this description owe their origin to scrofula, or to a venereal taint, or to abuse of mercury, or to scirrhouous degeneration, for which reason our prescriptions should be made with reference to these peculiar states of the system, as well as to the more immediate symptoms of the complaint.

With regard to other causes of retention, the importance of minute investigation into all the circumstances of each case, can not be too strongly insisted on; for much of our success will depend upon an early removal of those causes which have operated to induce the retention, and which perhaps continue to exist to perpetuate the malady.

If a retention has been caused by a metastasis of gout or rheumatism, our selection of remedies should be made with reference to these general diseases, as well as to more urgent local symptoms. If the cause can be traced to a displacement of the uterus, to impacted faeces in the rectum, to inflammation of any of the surrounding tissues, to the presence of ascarides in the rectum, to excrescences about the neck of the bladder, to imperforate hymen, to unnatural adhesions within the vagina, to the impaction of a stone in the urethra, our attention should be immediately directed towards the removal of these remote causes.

TREATMENT.—The following medicines will cover all of the symptoms which occur in suppression or retention of urine: *Cannabis*, *Uva-ursi*, *Solidago-virga-aurea*, *Acid-phosphoric*, *Rhus-radicans*, *Aconite*, *Pulsatilla*, *Nux-vomica*, *Arnica*, *Belladonna*, *Oleum-terebinthina*, *Tussilago-pertusa*, *Camphora*, *Agnus-castus*, *Arsenicum*, *Sulphur*, *Iodine*, *Electro-magnetism*, *Cantharides*.

Cantharides and *Cannabis*, are indicated in suppression from chronic inflammation of the kidneys, and in retention from long-continued irritation of the neck of the bladder. They may also be employed in suppression and retention from acute inflammation of the

kidneys and bladder, after the febrile symptoms have been subdued by *Aconite*. Hahnemann advises them in retention from paralysis of the neck of the bladder, and in cases of chronic retention arising from thickening and induration of the mucous membrane.

Arnica is our best remedy when the functions of the kidney and bladder have been impaired or suspended by mechanical injuries, falls, contusions, sprains, blows, and concussions, or by the irritation of calculi.

Rhus-radicans, *Belladonna*, and *Solidago-virga-aurea* are applicable when the disorder has proceeded from metastases of gout or rheumatism. These medicines may be alternated with *Aconite* when the inflammatory symptoms run high.

Agnus-castus is an excellent specific in retention in consequence of paralysis of the bladder. *Nux-vomica*, *Tussilago*, *Arsenicum* and *Oleum-terebinth* are remedies which should command attention in paralytic retention.

Spasmodic retentions are readily cured by *Camphor*, *Belladonna* and *Aconite*.

When gravel or calculi are the exciting causes of the affection, we advise the employment of *Uva-ursi*, *Solidago-virga-aurea*, and *Belladonna*.

Affections of the prostate gland may be met by *Pulsatilla*, *Sulphur*, *Aconite*, *Rhus-rad.*, *Arsenicum*, and *Iodine*.

Retention from onanism, from excesses in venery, are treated best with *Acid-phosphoric*, *Agnus-castus*, *Cantharides*, *Cannabis*, *Rhus-radicans* and *Arnica*.

ADMINISTRATION.—The lower attenuations should be employed in these afflictions, and the doses repeated every two, three, or four hours, until the medicinal effect is perceptible. Auxiliary to the above medicinal treatment, we (may) make a thorough use of warm baths, fomentations, bland, diluent drinks, injections by the rectum, and lastly, though not the least important means, electro-magnetism. This powerful remedy should only be employed after the inflammatory symptoms have been reduced, and then with extreme care and moderation.

13. ENURESIS.—INCONTINENCE OF URINE.

DIAGNOSIS.—This affection may be recognized by a partial or total loss of power to retain in the bladder the secreted urine. When the loss of voluntary power over the muscles concerned is total, the urine continues to dribble away as fast as secreted, becoming thus an incessant source of trouble and annoyance.

If the loss of power be only partial, the urine can be retained until a given amount is accumulated, when the patient is suddenly com-

peled to yield to the pressing demand, *sans ceremonie*. In other instances, the incontinence is troublesome only during sleep, and appears to be excited by dreams, constrained positions, &c.

The malady is unaccompanied by febrile symptoms or pains, and usually occurs as a symptom of some other disease.

CAUSES.—Complete enuresis may be caused by paralysis of the sphincter of the bladder from constitutional causes, from external injuries, from tedious and protracted labors, from the pressure of tumors, from calculous deposits and from abuse of diuretics.

Partial enuresis is a common complaint amongst children, and is particularly troublesome in the night during sleep. It has too often been attributed to habit, and negligence of proper efforts to restrain the discharge and punishment has been tried as a remedy, but generally without advantage. The disease in these cases is undoubtedly associated with irritation at the neck of the bladder, originated by acrid urine, gravel, the irritation of worms in the rectum, &c.

TREATMENT.—*Cantharides*, *Cannabis*, *Uva-ursi*, *Nux-vomica*, *Oxalic-acid*, *Gallic-acid*, *Cicuta-vir.*, *Sulphur*, *Calcarea-carb.*, *Pulsatilla*, and *Rhus*, are the chief remedies.

For the cure of paralytic enuresis, recourse should be had to *Cantharides*, *Nux-vomica*, *Rhus*, and *Uva-ursi*.

When the disease occurs in children, our best remedies are *Cantharides*, *Calcarea-carb.*, and *Sulphur*.

When from external injuries, difficult accouchements, or the irritation of calculi, we may prescribe *Arnica*, *Pulsatilla*, *Rhus*, and *Cicuta-virosa*.

ADMINISTRATION.—The remedies should be used at the first or second attenuations, and a dose given twice daily as long as necessary.

GENUS VIII.—OPHTHALMIA.

INFLAMMATORY AFFECTIONS OF THE EYE AND ITS APPENDAGES.

The eye, in the immediate vicinity of the brain, connected with this organ by the optic nerve, endowed with numerous delicate membranes, nerves and blood-vessels, with its lens, its aqueous and vitreous humors to conduct and modify the luminous rays in their passage to the retina,—all disposed in the most consummate manner to serve the end designed,—may be looked upon as a most complex and perfect optical instrument. It is the mirror in which are reflected the various tableaux of external objects for the satisfaction of the soul within, causing it to respond to such impressions, so that the most indifferent spectator may look into its depths, and see the manifestations of the perceptive faculties.

fined to the eye itself, or sympathetic symptoms may declare themselves in the head, stomach, and other parts of the economy. These developments will depend much upon the constitution, temperature and habits of the patient, the causes which have operated to produce the malady, the severity of the inflammation, and the tissue of one eye diseased, the corresponding structure of the other eye is exceedingly prone to a similar morbid action, from sympathy. This may be accounted for from the fact that the eye receives its nerves and blood-vessels directly from the brain, by which the sympathetic communication between the two organs is rendered very rapid and intense.

Finally, we direct special attention to the therapeutical connection, existing between morbid conditions of particular tissues and primitive medicinal symptoms upon the same tissues, in health. We have already a few specifics which impress certain structures only, and we trust that the time is not distant when medicines will be discovered capable of acting surely and specifically upon each separate part of the eye or its appendages. Fortunately, a few of our drugs have a wide range of action upon the visual organs, so that we shall be able, even now, to find specifics which correspond with almost any morbid symptoms that may present themselves.

1. AFFECTIONS OF THE TUNICA CONJUNCTIVA.

A. CONJUNCTIVITIS.—ACUTE OPHTHALMIA.

CONJUNCTIVITIS.—This may be 1. simple, 2. eruptive, 3. catarrhal, 4. purulent, 5. gonorrhoeal, 6. conjunctivitis of new-born infants.

Catarrhal Form. Dr. Williams* in both the acute and chronic stages depends upon a solution of Sulphate of Zinc in proportion of from two to four grains to the ounce of water, or rose water.

In the more obstinate or chronic cases, an additional local application should be made by the physician himself,—the crayon of Sulphate of Copper, prepared as heretofore described and lightly passed over the inner surface of the upper lid, which is the original seat of the disease.

Catarrhal ophthalmia usually begins with a reddening and swelling of the *caruncula* and *plica semilunaris*; the lining membrane of the lid exhibits the vessels increased both in size and brightness of color. Next the ocular conjunctiva becomes inflamed, and in severe cases the fine net-work of the vessels extends quite up to the edge of the cornea. It is only when this form of ophthalmia is not fully and completely cured in its acute stage that it lastly attacks the upper lid.

DIAGNOSIS.—One of the first *local* signs of simple inflammation of

* On Diseases of the Eye, p. 40-41.

the conjunctiva is an injection with *red* blood, of a number of the vessels which naturally admits only *white* fluid. This gives to the eye that slight appearance of redness and distention of vessels which characterizes the first stage of acute ophthalmia. The eye now becomes more than usually sensitive to light, smoke and dust; tears are easily excited; a feeling is experienced similar to that produced by particles of sand or dust lodged under the upper eyelid, causing the patient to constantly rub the eye, in order to remove what he supposes to be a foreign substance; a sense of heat, fullness, stiffness and tingling is felt in the globe and edges of the lids; and slight pains begin to shoot through the eye. At first but a part of the vessels become injected, but as the inflammation increases, the anastomosing branches become involved, until finally the whole eye presents a uniform appearance of deep redness, swelling and turgidity. At this period of the disease, the functions of the eye are all more or less perverted; there are acute pains in the ball; great intolerance to light; a profuse secretion of scalding tears; disordered vision; agglutination of the lids in the morning from matter secreted by the meibomian glands; intense pain on moving the lids; distressing sense of distention, weight and rigidity of the whole organ.

The symptoms thus far detailed, are purely *local* and include all the symptoms which are present from the commencement to the termination of many simple cases of acute ophthalmia. But in the majority of instances the whole system sympathises with the local affection, and we are presented with the following additional train of *constitutional* or *sympathetic* symptoms; acute pains extending from the eye into the temples and anterior portion of the brain; slight chills, followed by accelerated respiration and circulation; hot and dry skin; determination of blood to the head and face; nausea; loss of appetite; lassitude; general irritability; physical weakness; and other indications of general fever.

During the progress of the inflammation a peculiar appearance is often observed above the cornea, in the form of a circular elevation termed *chemosis*. This arises from the precaution which nature has taken to protect the cornea from the injurious effects of ophthalmia, by fixing the conjunctiva more firmly upon this portion of the globe than upon the other parts. By this peculiar construction, the distention of vessels and effusions resulting from violent inflammations, are principally manifested in the first instance, without the cornea, and thus in some measure protecting this important part from the injury it might otherwise sustain.

The severity of the symptoms will depend much upon the constitution of the patient, and the nature of the exciting cause. The disease may terminate in a cure, without any marked alteration in the appearance

of the eye, or it may result in *effusion*, causing an elevation of the conjunctiva above the cornea; or in *adhesion* of some portion of the conjunctiva covering the cornea, and giving rise to those appearances known as *nebula*, *albugo*, *leucoma*, and *opacity*; or in *suppuration*, from the surface of the conjunctiva; or in *ulceration* of some part of the cornea; or in *sloughing* of the cornea. These appearances will be more particularly described in our article on *opacity of the cornea*.

CAUSES.—Undue exposure to intense heat or cold; inordinate use of the eyes by a *glaring* or *dim* light; the application to the edges of irritating foreign substances; mechanical injuries; extension of contiguous inflammations to the eyes; sudden changes of temperature; metastases of gout and rheumatism.

PROGNOSIS.—If appropriate remedies are administered in the early stage of the disease, and before any organic lesion has taken place, we may generally predict a speedy and perfect cure. On the contrary, if effusion, ulceration, or the adhesive process of the conjunctiva over the cornea has commenced, we must be more guarded in our prognosis, for under these circumstances the malady often ends either in impaired vision, or a total loss of sight.

Much information may be derived respecting the probable termination of the malady, by a careful examination of the causes, which have been or may still be in operation, and of the temperament and constitution of the patient. For example, an individual of an irritable and nervous temperament, and of a delicate organization, may be affected with the most violent local and constitutional symptoms for a considerable period, without endangering the integrity of the eye; while a sanguine, plethoric, and robust patient might experience no constitutional effects, and but moderate local symptoms, and yet speedily suffer from serious disorganization of one or more of the tissues. Much will also depend upon our ability to remove all causes which may have conduced to the complaint, and to enforce upon our patients the necessary restraints and attention during the treatment.

TREATMENT.—The first therapeutical indication is to confine the patient to an apartment in which the light is mostly excluded. It must be remembered that this natural stimulus of the healthy eye becomes, during an acute inflammation of its tissues, a powerful irritant—a morbid agent capable of aggravating and perpetuating the disease. As the inflamed stomach can not tolerate its natural stimulus, the food, so the inflamed eye cannot endure with impunity, its ordinary stimulus, the light. Perfect cleanliness should be enjoined, and, in an exclusion of all dust, vapors, smoke, and bright rays of light. In making applications to the eye, great care should be taken to avoid compression of the inflamed part, in order that the circulation may remain unobstructed, and that sufficient air may be admitted to the parts.

Respecting *local applications*, we entertain the most exalted opinion of *cold water*. This may be applied by means of a few folds of soft linen cloth, which may be frequently dipped in the water, and after being partly wrung out, laid loosely over the eye and the surrounding parts. This application may be persisted in at suitable intervals, until the active symptoms have subsided, and a state of sub-acute inflammation occurs, when recourse may be had, if deemed necessary to *Collyria* of a slightly stimulating character, like weak solutions of *Zinc*, *Nitr.-argenti*, lead, or copper. In making use of these last named articles, we should only employ a strength sufficient to create a decided medicinal action, and omit the application when this effect is apparent, and so long as the consequent reaction or amendment continues; for *external remedies* when judiciously employed are subject to the same laws of *primary* and *secondary* action, as when administered *internally*. We shall say more upon this subject under chronic ophthalmia.

The medicines to which we call attention, are: *Belladonna*, *Aconite*, *Arsenicum*, *Sulphur*, *Digitalis*, *Euphrasia*, *Pulsatilla*, *Arnica*, *Spigelia*, *Mercurius-sol.*, *Graphites*, *Lycopodium*.

Belladonna.—Redness, swelling, and protrusion of the ball of the eye; chemosis; swelling of the lids; frequent discharge of hot salt tears, or dryness of the eyes; spasmoid closure of the lids; flushed cheeks; throbbing of the carotid and temporal arteries; full and rapid pulse; hot and dry skin.

Great intolerance to light; pain, burning, and smarting in the eyes; heaviness, pressure and throbbing to the ball and lids; sharp pains in the orbits, extending into the brain; tearing pains in the eyes from within outwards; dimness and obstruction of vision; spasmoid sensations in the eyes.

Nervousness; irritability; disinclination to mental labor.

Belladonna is suitable in ophthalmia occurring in sanguine and irritable persons, from congestions of blood to the eyes in consequence of exposure to cold, excessive use of the eyes, metastases of rheumatism and gout. It is particularly useful when constitutional symptoms show themselves in the form of acute or throbbing pains in the head and temples, hot skin, rapid pulse, flushed cheeks, dilated pupils, and perverted vision.

Pathogenetic effects of *Belladonna*:—

First.—Irritation of Mucous Membranes.—Dr. Richard Hughes says of the effects of this remedy:—The conjunctiva is generally injected in Bell. poisoning, sometimes partially inflamed. The remedy does well in alternation with *Aeonite* in catarrhal ophthalmia, also in the strumous form.

Second.—Throat.—It produces dryness, heat, soreness, and redness in this order. See its use in scarlatina and erysipelas.

In another paper Dr. Hughes inquires why *Opium* contracts and *Belladonna* dilates the pupil; and he comes to the conclusion that Opium contracts the pupil by depressing the sympathetic nerve and Bell dilates the pupil by exciting the sympathetic nerve.

Sensibility of the eye to Bell. is shown by Dr. De Ruyter, who states that a drop of a solution, containing not more than $\frac{1}{120,000}$ part of sulphate of Atropine, when kept for some time in contact with the eye of a dog, sufficed to produce a dilatation of the pupil lasting for twenty hours. A solution of $\frac{1}{600}$ produces a powerful dilatation in ten or fifteen minutes which disappears only at the end of four days. Of the single drop employed in this manner perhaps not one-fiftieth part is absorbed.

Aconite.—Vessels of the conjunctiva injected with red blood; lips red and swollen; chemosis; dilatation of the pupils; lachrymation, worse on the slightest exposure to light, dust, or smoke; photophobia; flushed cheeks; hard and rapid pulse; hot and dry skin, and other febrile symptoms.

Very great intolerance to light; pressing, stinging, burning, or exceedingly acute pains in the eyes; eyeball feels bruised, and pressed into the orbit; stinging and smarting of the lids; eyes very hot, and filled with scalding tears, or preternaturally dry; pressure, or sharp, beating or stinging pains in the head and temples; impaired vision, as from gauze before the eyes; general febrile disturbance.

Much mental excitement; fear and apprehension in regard to probable result of the case.

REMARKS.—This remedy is particularly called for when the local inflammation is very intense, and the constitutional symptoms run high. It operates most happily in plethoric, bilious, and sanguine individuals, who are subject to determinations of blood to the face, head and lungs. It is appropriate in ophthalmias caused by colds, by the introduction of foreign substances into the eye, and by rheumatism and gout.

Arsenicum.—Conjunctiva much congested, and of a dark red color; œdematosus swelling of the lids; profuse lachrymation; tears hot and corrosive to the cheeks; lids dry and red; eyelids partially closed from the great swelling; nightly agglutination; spasmodic movements of the lids, on exposure to light; ulcers on the cornea.

Sensation as if sand had become lodged in the eye; tearing, burning, or stinging in the ball and lids, aggravated by motion, or on exposure to light; throbbing in the eyes when lying down; impaired vision; weakness, weariness, and tremor of the lids; great intolerance to light; constant inclination to rub the eyes.

Mind weakened, and whole system rendered nervous and irritable by pain and suffering.

Arsenicum is applicable to those cases which arise in weakly and

nervous constitutions, where the pains are severe, and the disease is unusually obstinate. In this variety of ophthalmia, the local and sympathetic symptoms are very troublesome, but there is much less danger of serious organic lesions than in most other forms of the malady. It is advised in ophthalmia arising from cold, rheumatism and gout.

Sulphur.—Injection of the vessels of the conjunctiva; redness and swelling of the lids; lachrymation, or preter-natural dryness of the eyes; morning agglutination of the lids; photophobia; eyes swollen and prominent; cornea dim; lids œdematosus; distention of the conjunctiva from effusion.

Pressure of the eyeballs, worse on moving them; pressure, burning, and itching of the lids; intolerance to the rays of the sun; twitching of the lids; trembling of the eyes; painful dryness of the margins of the lids; bruised feeling of the eyes, on motion; sensation of sand under the upper lid, on motion; dimness of sight.

Sensitive; despondent; out of humor.

REMARKS.—*Sulphur* is adapted to lymphatic temperaments—a scrofulous or psoric dyscrasia; and may be employed in ophthalmia caused by repelled eruptions, abuse of mercury, or irritating matters introduced into the eye.

CASES TREATED IN THE ONONDAGO COUNTY ORPHAN ASYLUM.—(1860, *Amer. Hom. Rev.* Vol. 2, p. 125.)—Dr. Morgan reports that its inmates, averaging in number 125, had been severely afflicted by ophthalmia characterized by: Intense redness and swelling, profuse secretion of mucus and tears, excessive photophobia. New cases were constantly occurring, and new comers were almost sure to be attacked in spite of all precautions. The investigations failed to discover the cause of the malady; but a large majority were scrofulous subjects; the gums were more or less affected, some with scarcely perceptible redness and swelling, whilst others were extensively ulcerated. Spongy, easily bleeding, teeth loosened, breath offensive, salivation, &c.

The treatment that succeeded after former failures.—Give Sulphur 30, once a week to all well children. All affected with the ophthalmia were immediately placed under Bell. and Merc. Sol. in alternation; attenuations ranging from 3d to 12th. Repetition according to the severity of symptoms from every hour, to two a day; with occasionally a dose of Sulphur 30.

This course of treatment was crowned with the happiest effects. No cases of the disease remained under treatment when the disease was made. Vision was not impaired in a single instance.

Cantharides.—A man who was standing over a pan where Cantharides was boiling was affected with *inflammation of the eyes*, coryza, and swelling of the nose. Camphor was given. Next morning every thing appeared

to him yellow, which is a symptom of poisoning by Cantharides: he was well in three days. Camphor is the antidote of Cantharides.

The case of Wm. H. Prescott, the historian, is given in a late publication by Dr. James Jackson,* of Boston, which revives the melancholy sympathy which long ago pervaded all minds that had been enlightened or influenced by his works. Mr. Prescott lost an eye by accident, when he was on the point of finishing his studies at Harvard; and the other being compelled to perform double duty, was soon weakened, and its power was never recovered. Devoting himself to historical researches, he, by the aid of an amanuensis, composed those historical works, which have in all countries been regarded as among the highest of American literary productions; and after much suffering from disease, especially from the eyes, he died January, 1859, in his sixty-third year.

The medical treatment he received near the close of his life is given in this work. It seems that for the relief of a violent inflammation of the eye, which turned out to be rheumatic, more than seven pounds of blood were drawn in the course of five days, besides which he "was" says Dr. Jackson, "purged abundantly, was blistered freely, was kept in the dark, and on the lowest diet; also, the vessels of the conjunctiva were divided twice.

It is not for the purpose of commenting upon this treatment that we have quoted the author's exposition of it. Our creed differs from his, and it could not be expected that we should harmonize with him in measures which were, without doubt, conscientiously employed by him.

CONJUNCTIVITIS FROM EXTENSION OF STRUMOUS ECZEMA.—Case.—A boy, aged eight years, had eczema covering the face; secretions of lymph and pus, with blood from capillary lesions from crusts on the suppurating surface; the head and face swell; eyes are concealed by oedema of the lids; conjunctiva injected, papillary granulations; tarsi agglutinated; photophobia excessive; lachrymation; the globe remaining sound. The boy, who had been bright, became stupid and irritable. Was treated nine months by an oculist without benefit. Iodide of iron caused restlessness at night and fever. Dr. Hirschell, of Dresden, prescribed Graphites 2°, one grain twice a day. On the eighth day the crusts began to drop; soon left the skin smooth. Light became daily more tolerable. On the seventeenth day inflammation had vanished. A daily glass of Kreuznach waters (containing Bromine). A relapse occurred in winter but was promptly arrested by Graphites. A year after the boy continued well.

Graphites.—Acrid heat in the eyes; painful swelling and redness of the lids, and burning itching at their angles with muco-purulent secretion agglutinating the lids; also dry irritation of their margin; the light is insupportable. Adapted to ophthalmias evolved from a strumous

* "Another Letter to a Young Physician," &c., Boston, 1861.

diathesis. Lymphatic swellings, especially in subjects with light hair pale complexion, and deeply perverted moral symptoms. In vesicular eruptions as eczema, impetigo, pallæ and ecthyma, clematis fails; though it succeeds better in scrofulous eruptions, acne and syco-sis.

In the purely conjunctival form of catarrhal ophthalmia nitrate of silver is almost a specific; whereas, in ophthalmia involving the sclerota, and the cornea it is useless, even injurious. In the former of these affections the best of allopathic physicians sometimes arrest the disease in a week which by the *older* system of bleeding, blistering and starving, sulphate of zinc and saccharum saturnia would have employed months.

By the use of the crayon of sulphate of copper it is possible to destroy the inflammation without any of extreme results of nitrate of silver. The latter sometimes "destroys the tissues to such an extent as to cause adhesion of the entire lid to the globe, or produce indelible stains, which often ensue when the agent is employed for a considerable time." Dr. Williams says: "Having charge, at one time, of a large number of ophthalmic patients in a public institution comprising many cases of chronic granulation of the lids, I repeatedly applied the crayon of sulphate of copper to one eye, and solutions of nitrate of silver of various strength to the other eye of the same patient." "In every instance recovery was more rapid in the eye to which the crayon had been applied," and in some it was necessary to resort to it in those eyes in which the nitrate of silver had been tried.

In the conjunctivitis of new-born children the nitrate of silver should be avoided, as being less safe and less useful than the other means already described.

Calcarea.—Diseases of the eyes in scrofulous subjects, affected with glandular swellings. Dr. Guinness gives a case (*Brit. Jour. Homœop.* Vol. 5):—"A boy, aged three years, who had been ill twelve months, could not bear the least ray of light; eyelids puffed; flow of hot tears; much purulent matter discharged; face swollen, pale, unhealthy; abdomen large; dejection of spirits. He wished to sit by himself in the dark; an eruption on the legs. Sulphur 30°, a dose every morning was given to him for three weeks. This produced decided benefit. Calcarca 30° was next given, with still greater advantage. Then Sulphur was given one week and Calcaraea the next, and so on during alternate weeks; and the child was cured."

DIGITALIS.—*External Indications*.—Intense redness of the conjunctiva; inflammation of the meibomian glands; swelling of the lids; constant and profuse lachrymation; photophobia; dryness of the nose; morning agglutination of the lids; tears hot and corrosive; countenance bloated.

Physical Sensations.—Aching, throbbing, burning, pressing, or

stitching pains in the affected eyeball, worse when moving or touching it; feeling as of sand under the lids; discharge of hot and irritating tears, on exposure to the open air or to light; intolerance to light; dimness of sight; eyes constantly hot and painful; objects all appear unnatural; visions before the eyes.

Mental and moral Symptoms.—The predominant mental traits are despondency and mental languor.

REMARKS.—*Digitalis* is suited to sanguine temperaments and also to persons of a scrofulous habit. It has been successfully employed in ophthalmias consequent on colds, scrofula, and gout.

Euphrasia also corresponds to most of the symptoms of *Digitalis*, and may sometimes be substituted to advantage in place of this last remedy, when the desired effect is not promptly produced.

If, as Murray asserts, *Euphrasia* cures lippitudo and a certain form of ophthalmia, how could it otherwise produce this effect, but by the faculty it possesses of exciting a kind of *inflammation in the eyes*, as has been remarked by Lobelius.

The old practice of applying *rose water* externally in ophthalmic diseases, looks like a tacit avowal, that there exists in the leaves of the rose some curative power for diseases of the eye. This is founded upon the homœopathic virtue which the rose possesses, of exciting a species of ophthalmia in persons who are in health, an effect, which Echtius, Ledelius, and Rau actually saw it produce. (*Hahnemann*.)

Pulsatilla is appropriate in catarrhal or rheumatic ophthalmia, attended with pressure and burning in the eyes, as if from sand; redness and swelling of the conjunctiva and lids; coryza; profuse lacrimation in the wind or open air; burning and itching of the eyes, inducing a disposition to rub them; photophobia; inflammation and secretion of mucus from the meibomian glands; dimness of sight; morning agglutination.

Arnica is indispensable in ophthalmic inflammations caused by mechanical injuries of the eye, or of the parts in its vicinity. The remedy may be used *externally* and *internally*.

Spigelia is especially adapted to rheumatic and arthritic ophthalmia; the pains are of a pressive or stitching character, and aggravated by movement; the vessels of the conjunctiva are much congested; the cornea is dim; aching pains are experienced in the eye when touched, extending deep into the orbit; the upper lids swollen and stiff.

Mercurius-sol. is proper in catarrhal and rheumatic ophthalmia. Its indications are: Inflammation of the eyes, attended with burning, smarting, heat and pressure, worse in the open air; sensation as if sand were under the upper lid; profuse lacrimation; photophobia; darting pains in the eyeballs; redness and swelling of the lids; dimness of

vision; pains worse when moving or touching the eye; boring pains in the eyes and surrounding parts.

Other remedies are, *Graphites*, *Lycopodium*, *Nux-vomica*, *Calcareo-carb*, *Colocynth*, *Rhus*, *Coccus*, *Cannabis*, and *Dulcamara*, to which the reader is referred.

ADMINISTRATION.—In very acute cases we advise the third attenuation, and a repetition of the dose every two hours until the desired impression is produced. In more mild forms of the disease we use the first or second attenuations, and repeat every six or eight hours, as long as is deemed necessary.

Nitrate of Silver.—The common abuses of this potent remedy are well set forth by Dr. Williams in a recent American work on Diseases of the Eye.* When local applications are to be made to the eye, he says: Solutions are preferable to any other form, as their strength can be graduated to the proper degree. No ointments of any kind should ever be used inside the eyelids. They are liable to vary in strength, to become rancid or decomposed, and their fatty substance is ill suited for distributing the medicinal agent over the affected surface. He has "seen most serious results from the incautious use of Nitrate of Silver ointment in the hands of physicians" as well as in those of "well meaning friends." (p. 16.)

"The abuse of strong solutions of Nitrate of Silver" is another evil to which I feel bound to call attention. It is apparently considered by some a specific for all the diseases which eyes are heir to, and is so lavishly employed that we not only observe, as results, a disagreeable olive stain of the conjunctiva, but in some instances, destruction of the folds of this membrane and adhesions between the lid and the globe, where solutions approaching to saturation have been incautiously applied. It frequently aggravates the symptoms, and I can assert, as the result of many comparative trials, where the Nitrate in solutions of different strengths has been used for one eye, and solutions of Sulphate of Zinc, with perhaps the crayon of Sulphate of Copper for the other equally diseased eye of the same individual, that I have always found recovery slower in the eye to which the Nitrate of Silver was applied, and often been compelled to abandon its use and substitute the treatment under which the other eye had already recovered." The Nitrate of Silver may still be resorted to in certain cases, but he has long abstained entirely from using it inside of the lids; and thinks, "it would be a gain for ophthalmic therapeutics, if its use should become far less general; and when its application is followed by recovery, the same result would have been attained had milder means been trusted to." (p. 18.)

* A practical Guide to the study of Diseases of the Eye; their Medical and Surgical treatment. By Henry W. Williams, M. D., &c. 8vo. pp. 317. Boston, 1862.

The Crayon of Sulphate of Copper is capable of replacing with great advantage the Nitrate of Silver, in most of the cases where this has been in favor, especially in the treatment of conjunctival inflammation and granulated lids. It does not, like the Nitrate in substance or strong solutions, act as a caustic, destroying the surface of the conjunctiva, but as a powerful astringent. To obtain good crayons, which is exceedingly important, it is almost essential to procure crystals from a laboratory, or to recrystallize a quantity of the Sulphate; as when sent to market, the crystals are so much broken, that it is difficult to find suitable pieces. The part to be selected is the hard portion free from water of crystallization, near the apex of the crystal. This is to be carefully cut with a pocket-knife, or sawn into the desired shape, which should be that of an ordinary crayon of large diameter. It may be rendered as smooth as a piece of glass by rubbing with a wet rag, and fitted in a port-caustique. If the selection has been well made, the crayon will appear perfectly smooth, and if carefully wiped after each application, may be used a great number of times, and for various patients, without danger; though, of course, as a precaution, the physician should be provided with several, if he has to employ them upon those whose diseases are highly contagious. It should usually be very lightly applied over the whole surface of the conjunctiva of the everted lid. Too heavy a touch should be avoided, as, if clumsily used, it causes much more pain, and acts as an over-stimulus." (*Williams*, p. 19.)

"When the eyelid is covered with small, hard and pale papillæ, or as they are termed granulations, the best effects are seen to follow the light application of the Sulphate of Copper." (*Frederick Tyrrel. London. Vol. I., p. 137.*) As regards the large and flabby form, the cure is slow, and is but little assisted by local scarifications and the application of strong solutions of Nitrate of Silver, though applied by a camels-hair pencil to the inverted eyelid, and carefully wiped with a soft sponge. The application of the Copper, even lightly, gives great pain; and the patient should be always allowed after it to wash the eye freely in cold or warm water.

2. CHRONIC OPHTHALMIA.

Chronic ophthalmia may arise in consequence of the subsidence of the active symptoms of the acute form of the disease, and the persistence of a condition of sub-acute inflammation, or from causes which operate gradually, and induce an atonic state of the parts, and a low grade of morbid action. It may continue in this chronic state for years, without causing any notable organic derangement, the only difficulty experienced being a weak, sensitive and irritable condition of the eyes.

Diagnosis.—When chronic ophthalmia succeeds the acute, it will be

found that a part of the vessels of the conjunctiva have recovered their tone and now circulate only the white blood, as formerly, while the larger vessels remain injected with red blood. These larger vessels, during the progress of the disorder, become so much distended by the intromission of the red globules, that a varicose dilatation often remains for a long period after the acute stage has been passed, and thus establishes the chronic malady. One of the prominent local symptoms, therefore, of chronic ophthalmia, as distinguished from the acute variety, is the moderately congested state of the vessels, which renders the conjunctiva partly red and partly white. The eye is also much less sensitive to light, dust, and smoke; tears are not so easily excited; vision is improved; there is an absence of pain, burning and heat; tears are not so hot and acrid; the swelling of the lids is diminished, and febrile and sympathetic symptoms have disappeared. But the eye is more sensitive than natural to light; the edges of the lid are red or purple; nightly agglutination occurs; the patient is unable to use the eyes long at a time; objects often float before the eyes, obstructing vision; the lids itch and tingle, mostly in the morning on rising; flow of tears, caused by cold air, light, wind, smoke, dust, and vapors.

CAUSES.—Acute inflammation; habitual intemperance; constant exposure to irritating vapors; metastases of rheumatism and gout; external injuries; repelled eruptions; protracted exposure to cold in a region of snow; excessive use of the eyes by a strong or dim light.

PROGNOSIS.—Unless adhesions have taken place between the conjunctiva and cornea, or ulcers, cicatrices, or effusions have formed, so as to obstruct the rays of light, we may expect a ready cure of the disease. If however disorganization has already occurred and vision has become obstructed, we may predict a cure of the morbid inflammatory action, but only a partial restoration of sight. Habitual chronic ophthalmias, proceeding from intemperance, constant exposure of the eyes to stimulating vapors, &c., may readily be cured by removing the exciting causes, and having recourse to the appropriate local and internal remedies.

TREATMENT.—It is in this variety of ophthalmia that we may expect to derive most benefit from the use of stimulating Collyria. The object of all remedies, as has before been observed, is to create a healthy medicinal action in the diseased part, which shall supersede the morbid action, and thus secure a cure. But we have also seen, that this medicinal effect must be two-fold in order to prove curative; or in other words, there must be a *primary* and a *secondary* effect, the former *analogous* to that of the disease, and the latter the *reverse*, or *curative*. Whenever these two conditions result from the application of remedies, *internal* or *local*, a cure may be expected. Care, however, must always be observed, that the medicines be so adapted to the nature

of the case, that the primary symptoms shall be of short duration, and succeeded by the legitimate, opposite, or curative reaction. (Vol. I. p. 112.)

In deciding, therefore, respecting the proper strength of a local application to an inflamed eye, we may follow the maxims of Hahnemann, or, what will answer as well, adopt the following rule inculcated by Sir Astley Cooper, in regard to the use of Collyria, viz: "To judge how far the stimulus may be carried, the criterion is exceedingly simple; if you find that a certain degree of smarting and pain is produced, which soon subsides and leaves the patient much more easy than before, you may be convinced that the Collyrium is beneficial; if on the other hand, the patient experiences a great degree of pain, which does not subside speedily, and the vessels become turgid, you may be assured, that the Collyrium is doing harm, and that the quantity of stimulus ought to be diminished."

The best local stimulus we ever employed in clearly pronounced chronic inflammation of the eyes, is the wine of Opium (*vinum opii*), a single drop to be introduced into the eye once or twice in twenty-four hours, until there is a permanent reaction. When the secondary symptoms do not speedily appear after the application, we may then have recourse to a weak solution of *Sulphate of Zinc*, or. of *Nitrate of Silver*. If these fail, a solution of *Aconite* may be tried.

The internal remedies are: *Arsenicum*, *Belladonna*, *Calcarea-carbonica*, *Sulphur*, *Rhus*, *Silicea*, *Nux-vomica*, *Graphites*, *Phosphorus*.

The indications for the use of these different medicines will be found under acute ophthalmia. The principal difference between the two forms of the malady consists in degree rather than in the quality of the symptoms.

Respecting the administration and repetition of doses, we prefer the first, second, and third attenuations, and advise a repetition once in twenty-four hours until an impression is produced.

3. PURULENT OPHTHALMIA.

DIAGNOSIS.—This variety of ophthalmia is more violent and destructive, and runs its course with much greater rapidity, than that which we have described. It is characterized by a profuse purulent secretion from the conjunctiva, which collects and hardens about the lids and glues them together, and in this way acts as a constant irritant to the inflamed part. The disease commences like the simple acute ophthalmia, with itching, stinging, or burning sensations in the lids and globe, lachrymation, sensitiveness to light, redness of the conjunctiva, which soon increase to an intense villous redness, as swelling of the lids, sensations as if foreign substances, like sand or sticks, were in the eye,

and more or less indistinctness of vision. These symptoms augment very rapidly in intensity, the tingling sensations change to severe pains through the eye, sometimes extending to the temples, and even the brain itself; there is chemosis, the lachrymation becomes changed into a profuse secretion of pus, either yellow or greenish; the intolerance to light becomes more marked, the lids are very much swollen, and discharge much purulent matter; and there is almost a total obstruction of sight. Constitutional symptoms frequently occur, as in simple ophthalmia, in the form of headache, nausea, quick pulse, hot skin, general prostration, &c. This acute stage terminates in a short period in a sub-acute inflammation, or in ulceration and sloughing. When the former termination happens, there is a gradual subsidence of all the symptoms, and the disease remains for an indefinite period in this atonic state, after which the eye may recover its tone and healthy function. But if sloughing takes place, the destructive process may run on to a total destruction of the part, unless energetic measures are used to arrest its progress.

CAUSES.—Sudden alternations from heat to cold; endemic and epidemic influences; the irritation of hot sand introduced into the eyes; metastases of rheumatism, gout, scarlatina, small pox, and measles; abuse of Mercury; the morbid vaginal secretion to which the eyes of new-born children are sometimes exposed.

4. GONORRHOEAL OPHTHALMIA.

DIAGNOSIS.—This variety of inflammation attacks the conjunctiva also, and is attended with symptoms very similar to those of purulent ophthalmia, but of much greater intensity. This disease is supposed to be the most violent and destructive of any to which the eye is subject, and it is not uncommon to see it proceed to the entire destruction of vision, notwithstanding the most early and energetic attempts to cure it. There is especial danger, in gonorrhœal ophthalmia, of a speedy formation of ulcers of the cornea, and of rapid sloughing through the tunics of the eye. When, however, we are called to a case of this description, with intense inflammation and redness of the eyes, greatly swollen lids, very abundant discharge of pus, or of a dry and burning state of the conjunctiva and lids; excruciating pains in the eyes and head; chemosis; great intolerance to light; hot skin; nausea; thirst; and other febrile symptoms; it becomes us to exercise the utmost vigilance in our remedial measures, in order to save the eyes from ulceration and sloughing. Farther on we shall detail a method of treatment which will generally be found successful, even in the most severe cases. Nothing, however, but the strictest attention to every minute symptom

of the case, and a constant watch over medicinal effects will ensure success.

The *cause* of this affection is unquestionably the application to the eyes of *gonorrhœal matter*, and not, as some suppose, a metastasis or the disease to the eyes.

Another variety of purulent ophthalmia to which it is proper to allude is that which occurs in infants shortly after birth. This disease is supposed to arise from the contact of the vaginal secretion of the matter with the eyes of the child during parturition. The symptoms generally first make their appearance in about two weeks after birth, but they may occur before, or several weeks after this period. The symptoms are similar to those of purulent ophthalmia; but for the most part, the inflammation is less intense, and there is much less danger of the speedy supervention of ulcers of the cornea. It is quite true that ulceration and sloughing ultimately occur in these cases; but a longer time is afforded for our remedial efforts to take effect, and of course the prospect of cure thus enhanced.

5. GRANULAR OPHTHALMIA.

Contagious Conjunctivitis. Egyptian Ophthalmia. Granular Ophthalmia.

In 1825, two regiments of Neapolitan soldiers were ordered from Messina to Palermo in Sicily. They had scarcely taken up their quarters when a large number became affected with sore eyes. It was soon found to be rapidly extending, and many soldiers were losing their eyes. The king of Naples sent Quadri, the famous oculist, to investigate the disease. He at once decided that the disease was contagious, and called on any man who doubted it, to test his faith by applying some of the matter from a soldier's eye to his own. His opinion of the disease was this: "This is the so-called Egyptian ophthalmia, which is contagious, and seated in the conjunctiva; it was brought to the sick of these two regiments by some soldiers who had been drafted into them before complete recovery, and propagated by one to another by careless use of the same towels." The characteristic peculiarity of the disease at its commencement consists in an exudatory process, and the secretion which is here formed during the inflammatory process, is confined to the palpebral conjunctiva, and serves as a vehicle for the contagion. The serum also which accompanies the chronic form, or the so-called granulations can be a constant medium for spreading the disease further."

SYMPOMS.—It begins as a contagious catarrhal inflammation of the conjunctiva, with tension in the neighborhood of the eye, and the organ itself feeling as if sand or dust were in it; dimness; intolerance of light; watery appearance, and somewhat increased secretion of tears;

slightly injected conjunctiva, and corresponding redness of the eyelids; with tumefaction, and a collection of mucus in the corners of the eyes and in the lashes. On everting the lid one could find the commencing granulations in crowded prominences, especially in the corners of the lid.

When the disease had proceeded either slowly or rapidly from the first stage to the second, all the morbid appearances greatly increased; the characteristic secretion of mucus was more abundant; a thinner mucus, like white of egg, mixed with tears, flowed down the cheeks, but with a tendency to harden upon the cilia, and in the corners of the eyes, and to form crusts on those parts, so that, on waking the patient, the eyelids might be found stuck fast together. The intolerance of light and the pain increased, the latter reaching the orbits and side of the head. There is now intense, tensive, lancinating, and particularly burning pain in the eye, increased on each movement of the eyeball. The eyelids are bright red, swollen; and frequently an erysipelatous swelling extends upwards towards the forehead. When the swelling is somewhat abated, and the eyelid is turned outwards the conjunctiva is seen studded with watery, sponge-like excrescences, which are dilated with blood, and either look dry or hold in their interstices mucus or a puriform secretion. These excrescences sometimes bleed when touched. The conjunctiva over the sclerotic is found much reddened and injected with blood and sometimes even thrown into a kind of wall around the cornea. The palpebral conjunctiva, especially the upper portion, is often so swollen that it projects dark and distended through the palpebral tissue. These appearances, the hindrance to the escape of mucus, and consequent cloudiness of the cornea, the contraction of the pupil from sympathetic irritation of the iris, and finally, the febrile reaction, characterize the second stage of the disease.

Third Stage.—The thick mucous secretion in the eye becomes changed into a thick, yellow pus-like matter, which after a time, so increases in quantity, that it escapes from beneath the upper eyelids, flows down the cheeks, and often causes them to ulcerate. At this point all the other symptoms attain their greatest intensity; the redness and swelling of the conjunctiva increase more and more; and the redness of the upper eyelid becomes of a livid hue; the tumefaction enlarges, spreads to the orbital ridge, becomes dark and hard, and so overlaps the lower lid that the patient is no longer able to open the affected eye. The pain in the eye becomes more acute, spreading to the eyelids, and also to the globe, the orbital cavity, the forehead and temples; it is intense, *burning, lancinating, penetrating,* intermitting, and often accompanied with evening exacerbations, reaching their intensity about midnight. The patient complains that he is holding his eyes over red-hot coals; and others say they feel the pain like to electric shocks

transmitted through the eye. The intolerance of light is intense, the pupil remaining contracted strongly and motionless. The swollen conjunctiva of the upper lid is now often projected considerably through the palpebral fissure and prevents the escape of the pus from the eye. The inner surface if now examined, shows the palpebral and ocular conjunctiva much injected and swollen, and running with pus and mucus; the vascular meshes were in this stage no longer distinguishable; round the margin of the cornea appeared a pale red, soft, irregular, mottled swelling, in which the cornea appeared to be buried, and was almost lost sight of. By drawing aside the red folds which were around the cornea, and which appeared on the surface smooth and level, they were often found to cover granulations seated on the conjunctiva. When the iris could be seen, it was observed to be rigid, and the pupil motionless; the whole system is excited by intense fever, accompanied in irritable subjects by delirium at night. In this stage is recognized the third form or the contagious blepharo-blennorrhœa. When much swelling appears in the lower lid it has the effect of displacing it and producing ectropium. Attempts to open the eye often give rise to temporary ectropium. Towards the termination of this period there is extravasation of blood from the vessels of the palpebral conjunctiva, and this is followed by diminution or change in the secretion, and sometimes by its complete cessation.

Duration of the Disease.—The first stage lasts for a few hours or several days according to its severity. The latter stages are often prolonged for weeks. The nature of the products of inflammation is different in different degrees of intensity of the disease. After the acute form, morbid alterations and hypertrophy of the conjunctiva rarely remain. The chronic form is followed by a variety of products. Some of these are, warty growths, spongy, filamentous or cauliflower-like excrescences with which the conjunctiva is studded; these are fissured and contain pus in the interstices; though they are often dry, distended with blood, and softer ones bleed when touched. These granulations sometimes remain for a long period, resembling transparent milky vesicles, or milky yellowish knots with a pearly lustre, bathed in serum. The growths on the conjunctiva assume various forms; the brush-like watery exudations are usually firm and hard, of fibrinous character; more commonly found on the upper lid. Those on the tarsal portion small and in rows side by side. In other parts they are in groups, which in some remain a long time stationary. This roughness of the conjunctiva, or "trachoma," indicates the chronic condition of the membrane which is the immediate cause of the roughness apparent.

PATHOLOGY AND DIAGNOSIS.—Dr. Bærtl says "the peculiarity of granular ophthalmia in its commencement consists of the exudation of organizeable plasma beneath the conjunctival epithelium in the form of

small, distinctly translucent, light, and subsequently distended vesicles, which arrange themselves in rows like a string of pearls behind the tarsal margins, or may be found scattered with equal abundance over the whole surface; and further, the vesicles seated on the tarsal surface are smaller, flatter, and less regular in form. In many chronic cases they may remain for weeks with scarcely any abnormal vascularity of the conjunctiva, and without pain or uneasiness more than for heaviness of the lid. In the eye there is then no increase of mucus, and but slight cloudiness can be detected in the eye, which is only moist or slightly oedematous.

On the other hand, in the acute attack the process has commenced before the patient suffered from pain or redness of the eye. Its duration is only a few hours before a notable congestion of the part takes place, with burning pain, feeling of sand in the eye, increased secretion of tears and mucus. The lids become oedematous, the conjunctiva distended, infiltrated with simple serum, and traversed by fine, closely netted blood-vessels; the vesicles, clear at first, become opaque, yellow or gray, and finally red.

Subsequently a deposit of plastic exudation take place into the parenchyma by which the conjunctiva is increased in thickness and thrown into folds; the membrane between the vesicular granulation is thickened; and growth and exudation occur at the same time, and also in the finer vesicular meshes that supply the papillæ.

DIAGNOSIS.—Fleshy elevations sometimes occur on that portion of the conjunctiva which lines the eyelids, resembling in all respects granulations, and by their irritating effects upon the ball of the eye, give rise to troublesome inflammation, ulceration, and now and then to loss of sight. This affection has more frequently baffled the surgeons of the old school, than any other pertaining to the eye. Venesection, leeching, cupping, blistering, moxas, cathartics, alteratives, stimulating collyria, and caustic applications have all been found entirely inefficient in its treatment, and the patients are generally doomed to a wretched existence for one or more years, until disorganization of the eyes by ulceration, leaves them in perpetual darkness. By homœopathy, however, a new and healthy action can be created in the affected structure, which shall overcome and supersede the morbid action.

These morbid granulations usually arise from an acute or sub-acute inflammation of the conjunctiva, occurring in individuals whose constitutions have become impaired and tainted by protracted syphilitic, gonorrhœal, psoriac, or scrofulous complaints. The granulations are rough and uneven, secrete an abundance of pus, which serves to irritate and weaken the eyes, and on every motion of the lids, operate on the balls as foreign substances; thus keeping up a perpetual inflammation, and sooner or later leading to ulceration of the cornea. The dis-

case is for the most part confined to the upper eyelids, although we have seen, in some instances, the conjunctiva of the lower lids rough and granulated.

Occasionally we may detect the true character of the complaint by the thickness of the lids, and their roughness and unevenness to the touch; but the only certain method of investigation consists in turning over the lids, and thus exposing the palpebral conjunctiva to the sight.

This disease very often proceeds to a fatal disorganization of the eye, without a true knowledge on the part of the physician, respecting the nature of the case. It is usually mistaken for one of the varieties of purulent ophthalmia.

SIMPLE CONJUNCTIVITIS.

CATARRHAL INFLAMMATION.

1. Edges of the eyelids are partly or entirely hard, sensitive, and swollen; but the swelling does not extend beyond the margins.

2. The capillary injection is in irregular branching meshes, rarely in the eyeball entirely red, as in contagious ophthalmia, and even then it only appears after long duration and maltreatment of the disease or after repeated relapses.

3. The disease in the mild form is distinguished by the formation of phlyctenæ and abscesses, which always arise side by side, on a patch of connected parallel vessels.

4. The secretion contains epithelial cells in the earliest stage of development, and fatty globules from the meibomian follicles; and it is moderate in quantity through the whole course of the disease.

5. Serous infiltration of the sclerotic conjunctiva and of the eyelids is rare, and if present is always moderate.

6. None of the neighboring parts except the nose are implicated.

7. Conjunctiva only slightly swollen and velvety.

CONTAGIOUS CONJUNCTIVITIS.

1. In contagious blenorhoea the first symptoms of inflammatory swelling are confined to the palpebral conjunctiva on the tarsal surface. The inflammation does not extend from without inwards, but from the point of origin, both outwards and inwards.

2. The vascular injection is uniform, and the single vessels indistinguishable, for the whole eyeball is red, the conjunctiva as if broken down, and of an opaque lustre.

3. The inflammation in the mild form confined to the palpebral conjunctiva. In the more advanced state, a delicate homogeneous network of closely-packed vessels is formed over the sclerotic.

4. The secretion contains fully developed epithelial scales, a few mucons corpuscles, and no fat globules, but abundance of pus corpuscles.

5. The serous infiltration and consequent bulging around the cornea, are always present, and the swelling of the eyelids is considerable.

6. The parts around the eye, and especially the cheeks, are puffy, and the temporal region is often erythematous. The nose is only implicated when scrofula is present as a complication.

7. The conjunctiva swells so much, as the serous infiltration increases, that it projects through the fissure of the lids and causes ectropium of the lower lid.

8. The pain is in the first instance stinging and itching, principally in the corners of the eyes and on the lids; subsequently it is burning; in consequence of the over-distention of the capillaries.

9. The flow of tears is increased and continuous; the tears scalding; intolerance of light considerable, and lasting as long as the excessive secretion of tears.

10. Generally the result of atmospheric changes, especially sudden variations of temperature, mists, damp residence, &c., most common in spring and autumn.

11. Sometimes contagious though not always so.

12. Never exhibits the characteristic vesicles.

13. Lower lid usually first affected.

Microscopic examination by Hawr, an oculist of Lemburg in Galicia, showed that in the vesicular granulations the exuded plasma is charged with young epithelial cells, and the epithelium itself is considerably increased in thickness by stratified deposits of new elements. In the case of red granulations he describes numerous vascular loops in the mass of young cells, which loops appear to owe their origin to increased development and projection of the deeper papillary bodies into the mass of young cells as to a new growth of cells.

If granular ophthalmia be not checked at the commencement, the vesicles become organized into granules; still later, both forms of granulation increase in number and organization, under the influence of the constant friction and repeated infiltration; and at last they present the forms known as sarcomatous growths.

Unfavorable products of granular conjunctivitis: acute blenorhoea, ectropion, hypertrophy of the tarsus; conversion of the soft into hard fibrinous feebly vascular excrescences; partial or complete atrophy of the conjunctiva in consequence of the pressure from the exudation upon the normal conjunctival tissue; synblepharon posticum, and entropium in consequence of this atrophy; pannus as a consecutive disease, caused by the friction from the rough inner surface of the lids.

CAUSES.—It is usually ascribed to insufficient covering, consequent congestion of the head, followed by exposure to chills; but the chief source of the disease must always be the contagious principle, a peculiar morbid product which spreads the disease from one man to another. Other causes which promote its development are: crowding of many

8. A feeling of sand or dust under the lids is here characteristic, and depends on the inflammatory swelling in the tunic of the conjunctiva.

9. Flow of tears diminished coincidentally with the photophobia. Intolerance of light very great at the commencement and at the height of the disease.

10. Occurs in hot and moist weather, during great electrical changes, at which times pre-existent disease is apt to increase in severity.

11. Always and under all circumstances contagious.

12. The vesicles are always from the first distinctly visible on the conjunctiva of the eyelids.

13. The upper lid is first attacked.

soldiers together; unfavorable climatic influences; bad location of the camp; exposure to high temperature; consumption of large quantities of spirituous drinks, &c. The disease may be epidemic in character instead of contagious.

PROGNOSIS.—The persons most liable to attack are those most intimately associated with the sick; those exposed to other common causes of disease; and those especially in whom, with the naked eye, we can detect in everting the upper lid, a small red elliptical spot seated in one or other, rarely in each angle, whilst the rest of the conjunctiva is normal, and in the centre of this spot a red projection of the membrane with one or more little eminences (commencing granulations), the patient all the while complaining of nothing else. A mild form of the disease is seen in cases in which there is congestion of the conjunctiva with diminished secretion.

In a severe attack the granulations arise over the whole surface of the conjunctiva and cornea, and the secretions are more rapid, and profuse.

The most serious cases of all are those in which not only a constant discharge of pus exists, but often also ulceration and its consequences, appear in the course of a few hours or days.

Convalescence is evidenced by our discovering in the conjunctiva no abnormal change; by the blood recovering from its morbid condition.

TREATMENT.—The earliest efforts at treatment have generally been directed to the extermination of the above described vesicles, and thus to the bringing of the disease speedily to a termination at its first stage, and whilst it is curatively local.

The patients who first become the subjects of granular ophthalmia in any locality should be immediately separated from all healthy and convalescent persons; the eye must be protected from light, draughts of air, and dust; forbid all stimulants in drink or food; no linen but fresh and clean must be used, and the towel he touches must not be used by others.

MEDICAL TREATMENT.—*Aconite, Bell., Apis, Argent.-nitr., Arsen., Euphras., Digitalis, Mercur., Lycopod., Rhus, Sulphur,* correspond to this disease.

LOCAL REMEDIES.—The best local specific is the sulphate of copper in substance, a small piece of which is to be smoothly polished, and rubbed lightly over the granulations once or twice a day, following application with a camel's-hair brush filled with pure water. A persevering use of this substance will, as we know from experience in these cases, cure the most inveterate forms of the complaint.

Among the modes of treating this disease Nitrate of Silver carefully applied in substance has held the first rank. It is directed to hold the stick of the fused *Argentum-nitricum* between the fingers as a pencil,

introducing it carefully between the eyelid and the globe, while the patient looks upwards, and thus, to rub it lightly on the vesicles, and on them alone, till they are destroyed. The burning pain which follows is to be alleviated as it may be by washing the eye, applying wet cloths, &c. That the Argent.-nitricum is homœopathic to the inflammatory condition is not questioned; but many homœopaths have objected to this heroic application of it. General experience in this peculiar form of ophthalmia has sanctioned it; and it will most probably maintain its ground.

In conjunction with the above means, we may employ one of the following medicines: *Sulphur*, *Calcarea-carbonica*, *Hepar-sulphur*, *Iodine*, *Graphites*, and *Actd-nitric.*, as internal remedies.

At Eye In selecting our internal remedy, regard must be had to the cause as well as the symptoms of the disease. We advise the first attenuations, and the dose to be repeated once in twelve or twenty-four hours, as long as necessary.

Sulphur.—Commencing catarrh; tension as if sand in the eye; dryness of the eyeball; itching in the eyes and lids; disagreeable heat and burning as if the eye were about to inflame, accompanied by redness of the eye and swelling of the lids; lachrymation, and closure of the eye.

Aconite.—Inflammatory and febrile symptoms commencing. The pain, redness, burning and heat increasing.

Cold Lotions.—Ice-water, fomentations, &c.

Belladonna.—The pain in the eye becoming intense and throbbing. In alternation with Aconite.

Digitalis.—Pain in the eye tensive. In alternation with Mercur. in gonorrhœal ophthalmia. Followed at the end by *Lycopodium*.

Argent.-nitr..—Appears to be indicated in most forms of this disease and has in many cases induced a rapid cure. In contagious catarrhal ophthalmia commence with one drop of the sixth dilution, in water, twice a day or oftener. If improvement is not soon seen, try the third dilution, a drop in a tea-spoonful of water. At the same time the affected eye should be washed over with the medicine in water. At first ten drops of the first dilution may be tried, afterwards, a solution of one grain of Nitrate of silver in the ounce of water may be used by absorption in a pegglet of linen, folded and laid over the eye, and renewed occasionally.

In blepharo-blennorrhœa the same local use of this article may be tried, even to the strength of three or four grains to one or two ounces of water; diminishing the strength as the severity of the disease subsides.

In addition to this application, the eyes should be washed repeatedly with warm water; the surface of the cornea should be kept as

clean from pus as possible ; often needing washing every half hour to prevent the accumulation of pus and exudations.

In hard fibrinous granulations the morbid growths may be touched over with lapis infernalis, followed by cold fomentations.

Dr. Hawr treated blepharo-blennorrhœa with drops of a solution containing five to ten grains of nitrate of silver in the ounce (after washing the eye) and generally with astonishingly good effects. In granular ophthalmia, even when accompanied by highly inflammatory symptoms, redness, swelling of the conjunctiva palpebrarum, redness of the eyeball radiating from the corneal margin, photophobia, lachrymation, spasm and headache, and, undeterred by the inflammatory symptoms, he touches with lapis infernalis the characteristic vesicles in conjunction with the lid, in order to avert the chronic state. A milder preparation consists of two parts of Nitr. silver, and two of pure nitre, and its use was soon followed by abatement of the symptoms and a speedy convalescence. Dr. Hawr said this treatment was better, quicker and more certain, even if not more pleasant than the old antiphlogistic plan. By cauterizing the granulations he usually got rid of the photophobia lachrymation, cramp and pain; he would cut off sarcomatous growths and then cauterize the raw surface. The Russian military surgeons pursue a similar practice ; employing nitrate of silver six to twenty grains to the ounce of distilled water.

Arsenicum.—The pain in the eye is unbearably scalding, and the eyeball feels like a red hot coal in the orbital cavity. This may be in the early stage ; and it may be used during the use of the cooling lotions.

Arsenicum is also useful in the second stage of blennorrhœal inflammation with suppuration of the eyelids.

When the conjunctiva forms a wall around the cornea, the secretions are accumulated in the centre, so as to endanger that structure, the pains extend to the neighboring parts, it is proposed to cut out a portion of the conjunctiva with a pair of curved scissors; first raise a piece of the puffy membrane with the forceps, and then cut with the convex surface of the scissors. If the conjunctiva of the upper lid is puffed and protruding so as to prevent the opening of the eye and the necessary washing, no harm is done by cutting off a portion, as the swelling of the eyelid is at the same time diminished.

Rupture of the Cornea.—The local application of Belladonna is the principal reliance. Three grains of the extract may be dissolved in two drachms of water, and once or twice daily dropped into the eye. By this means the pupil is retained in a permanent state of dilatation, and the sight thus preserved after the cornea is healed.

Intense Ulceration of the Eye.—**REMEDIES** :—*Arsen.*, *Alum.*, *Baryta*, *Bellad.*, *Calc.*, *Carbo-veg.*, *Hepar*, *Lycopodium*, *Mercur.*, *Natrum-mur.*, *Pulsat.*, *Rhus*, *Sepia*, or *Sulph.*

Spots on the cornea-nebula, remaining after inflammation has ceased, may be removed by the use of *Apis*, *Arsen.*, *Calc.*, *Cannabis*, *Conium*, *Kali-iod.*, *Lycop.*, *Mer.*, *Staphys.*

Purulent Ophthalmia, or *Blennorrhœa Aegyptiaca*, as well as the ophthalmia neonatorum are of sycotic origin. The first appears particularly after re-vaccination among the soldiery. Dr. Wolf proposes *Thuja* as the remedy, though he has tried it in but few cases. He succeeded in some with *Aconite* and *Apis*. The same treatment will also cure chronic ophthalmic-blennorrhœa. The greatest danger is produced by the localization of the sycotic poison in the brain, where it causes all the symptoms of the most acute inflammation; and yet after death no sign of inflammation is found. Such cases are of rare occurrence, though they originate in the suppression of a fresh blennorrhœa, or of a catarrh in children after vaccination, or in scarlet fever. In such cases *Apis*, *Belladonna* and *Stramonium* fail; *Thuja* promises to be the effectual remedy. In doubtful cases *Aconite* or *Apis* may be tried; and if the fever still progresses, one dose of *Thuja* 300°.

Sclerotitis.—Though the sclerotica may be specially inflamed it is not commonly much diseased, except in connection with inflammation of other tunics or structures, which are more delicate and more essential to the safety of the sight; therefore, in the complicated inflammations which involve the sclerotica more serious disease generally is going on in other structures. Thus injection of the vessels of the sclerotica takes place whenever the cornea or iris are seriously affected, or when the entire globe is attacked, or an abscess forms within it; its structures may become thinned from disease of the choroid; but in all these circumstances the alterations in other parts precede those in the sclerotica, and are the important objects of our attention. The sclerotica in all of these cases calls for no special care, but the treatment necessary for the whole case depends rather on the nature and degree of the disease of the associated structures.

6. OPACITY OF THE CORNEA.

DIAGNOSIS.—Opacities or specks upon the cornea vary much in size and appearance. Various appellations have been given to these different opacities, as: *nebula*, *leucoma*, *albugo*, &c., depending upon the nature of the cause, and the particular tissue affected. The opacity may consist of slight misty or opaque spots, diffused over a part or even the whole of the cornea, of a light color, such as are caused by a perverted secretion of the inner lamina, and termed *nebula*; or of small and circumscribed spots, of a pearl color, and entirely opaque, caused by a kind of false membrane under the conjunctiva, and termed *leu-*

coma; or of cicatrices resulting from the healing of ulcers and wounds of the cornea, and termed *albugo*.

When the disease consists of a simple diffused nebulous opacity, we can distinguish through it the pupil and iris, and the rays of light pass to the retina so as to give rise to imperfect vision; but the other kinds of opacity do not permit the passage of luminous rays, and, consequently, when situated in front of the pupil, destroy or seriously impair vision.

The two first varieties are caused by purulent ophthalmia and granulated lids, and are results most to be dreaded, especially in constitutions tainted with scrofula, syphilis, psora, or mercury.

TREATMENT.—The best local stimulus is a collyrium, composed of one grain of *Sulphate of Zinc* to four ounces of water. A few drops of this may be put into the affected eye, from two to four times in twenty-four hours, until the opacity begins to disappear, when we should omit it as long as the amendment continues.

The internal remedies most to be relied on are: *Calcareo-carb.*, *Iodine*, *Mercurius*, *Sulphur*, *Sepia*, *Arnica*, *Hepar-sulphuris*, *Acid-nitricum*, *Aurum-muriaticum*.

Attenuations and repetitions the same as in *chronic ophthalmia*.

II. AFFECTIONS OF THE DEEPER-SEATED STRUCTURES OF THE EYE

I. INFLAMMATION OF THE CORNEA.

DIAGNOSIS.—Inflammation of the cornea may exist as an independent affection, or it may occur during the progress of *iritis*, and other acute derangements of the internal textures of the eye. Soon after the inflammation sets in, a number of the serous vessels are observed to carry red blood; the cornea loses its brilliancy; the eyes become sensitive to light; a profuse secretion of tears is induced from exposure to cold, air, light, dust, and smoke; tension and pains are experienced in the eye; yellow spots, composed of pus, are observed between the lamellæ of the cornea, by looking obliquely through the eye; these abscesses, if the disease continues, eventually burst internally, and discharge their contents into the anterior chamber, or externally, and form those troublesome ulcers of the cornea, which so often endanger sight. When these ulcers are small and confined to the anterior portion of the cornea, they may often be cured without material injury to the eye; but when the ulceration pervades the whole lamellated structure of the cornea, it is not uncommon for the aqueous humor to escape through the opening, and even the iris itself to protrude.

ULCERATION OF THE CORNEA.—Case by Dr. Alex. Walker. (*Month. Hom. Review*. Vol. 5, p. 268.) A lady, after three miscarriages, &c.,

and extensive haemorrhage, found, two months after, the left eye becoming weak and dim; lachrymation ensued; finally ulcers appeared on the cornea; these were accompanied by excessive suffering, loss of rest and appetite; considerable fever. In the course of a few months the eye seemed slightly improving; but metastasis took place to the right eye. The diseased condition persisted for sixteen years, during which eighteen different physicians and oculists in succession endeavored to cure it without success. Stimulants had been prescribed in full variety. The patient was found sitting with her back to the window; the blinds all down, room darkened; photophobia excessively distressing. Seven ulcers were visible on the cornea; lachrymation so extensive as to saturate four or five handkerchiefs in a day; inflammation higher at night, pain and suffering preventing sleep till four or five next morning; sclerotica and conjunctiva fiery red; meibomian glands much ulcerated; outer ring of the iris dusky red; violent pains in the supra-orbital and temporal regions, increasing toward evening; great nervous debility; depression of mind; flatulence; constipation, indigestion. The patient inherited a rheumatic diathesis. The latter fact influenced the prescription. Stimulants discontinued. Bryonia was given twice a day, and a dose of Aconite at bed-time. Weak collyrium of Bryonia to the eye. This was continued for five days, and then omitted for two. At the end of the first week the inflammation of the cornea, iris, sclerotica and conjunctiva was much reduced. After the third night some refreshing sleep, and improved digestion, less flatulence. Cold water was used in the morning and after dinner, cold bath in the morning; diet simple, plain but nourishing; suppers forbidden. In the course of the treatment under which she recovered full health in a few weeks, she took Sulphur, Calcareo-carb., Mer.-sol., and, occasionally, Aconite. The remedies were generally employed in the sixth and third potencies. Some patients are powerfully affected by the high potencies, others who are insensible to the high are satisfactorily cured by the low.

CONICAL CORNEA.—Mr. Bowman's operation for relief of this affection consists in "puncturing the cornea near its lower margin, drawing out the iris by means of a short blunt hook, and securing it outside of the corneal wound by a fine ligature."

2. IRRITIS.

DIAGNOSIS.—This peculiar affection of the eye is by no means easy of detection, on account of the situation of the iris, and the small number of external symptoms which characterize the complaint. Inflammation of this texture is, however, more productive of constitutional or febrile symptoms than affections of the external tunics. This may in

part be owing to the loose attachments of the conjunctiva to the eye, and the more ample scope for effusions into the subjacent cellular tissue.

Iritis commences with a dull, pressing, heavy, and deep-seated pain in the orbit; contracted pupil; change in the natural color of the iris to a dark, greenish, or reddish color; a moderate rose-colored blush of the conjunctiva; diminished power of vision, and considerable sensibility to light.

As the disease advances, the pains become acute, and extend from the eye into the temples and to the top of the head; the contraction is more strongly pronounced; sparks and luminous flashes pass through and before the eyes; the nervous system is excited; the pulse accelerated; the skin hot and dry; the intestinal and urinary secretions are partially suppressed, and there are other indications of constitutional disturbance.

After these severe symptoms have continued some time, the iris presents an irregular, angular, and thickened appearance, and is covered with specks of yellow lymph. Small abscesses now form on the iris, which ultimately burst into the anterior chamber, which is afterwards usually absorbed. If extensive adhesions have formed between the iris and the capsule of the lens, or if the more deep-seated parts have become involved in the disease, an almost total loss of sight is the common result.

In some instances the inflammation extends from the iris to the retina, the choroides, the cornea, and finally involves the whole internal structure of the eye, when the malady will present symptoms characteristic of the inflammation of these different structures. In cases of this description, the symptoms are of the most violent character, the pains are exceedingly acute and painfully throbbing; there is a very rapid contraction of the pupil, the sight is speedily extinguished, the constitutional signs are very urgent, and the patient is always in imminent danger of rapid loss of vision.

CAUSES.—The most common cause of iritis is the abuse of Mercury. Syphilis has been often assigned as a cause of it, but we believe, without just reason. It has often been observed during the treatment of syphilis by Mercury; but, we think, never in syphilitic diseases where Mercury has not been employed. Other causes are: mechanical injuries, rheumatism, gout, excessive use of the eyes over minute objects.

TREATMENT.—The most appropriate remedies are: *Hepar-sulph., Acid-nit., Muriate of Gold, Cocculus, Calcareo-carb., Nux-vomica, Belladonna, Conium, Lycopodium, Staphysagria, Arnica, Aconite.*

Hepar-sulphuris, Nitric-acid, and Aurum-muriaticum are curative in iritis arising from abuse of *Mercury*, with aching, throbbing and tearing pains in the orbit, sometimes extending to the top of the

head; pains in the bones about the eyes; fiery sparks before the eyes; intolerance of light; contracted pupil; partial or entire loss of vision; dark or greenish color of the iris; spots of yellow lymph, or ulcers on the iris; febrile disturbance.

Coccus, Nux-vomica, and Belladonna are indicated in arthritic and rheumatic iritis, accompanied with deep-seated, lancinating, tearing, or contractive pains in the ball, and extending to the top of the head; involuntary, spasmoid movements of the globe; irregular contraction of the pupil; discolored and pucker'd iris; photophobia; pains aggravated on moving the eyes, or stooping; luminous specks or dark objects float before the retina; greatly impaired vision; effusion of blood and matter into the anterior chamber of the eye; indications of gastric derangement, and of general constitutional disturbance.

Calcarea-carbonica, Conium, Lycopodium, and Staphysagria are appropriate in iritic inflammations connected with a scrofulous diathesis. These remedies cover: greenish or yellowish color of the iris; pupil much contracted and distorted; ulcers which have opened internally or externally; outward distention of the iris; adhesions of the iris to the capsule of the lens; moderate participation of all the structures of the eye in the morbid action; photophobia; vision destroyed or much impaired; difficulty in distinguishing the iris from effused lymph and pus into the anterior chamber of the eye; great general irritability; aching, throbbing, lancinating, or pressing pains in the eye; rapid and irritable pulse; restlessness; hot skin; loss of appetite; mental and physical prostration.

Arnica is necessary when the disease can be traced to a wound, or to any mechanical injury of the eye. It may also be properly employed in cases which proceed from sudden exposure of the eyes to an intense and glaring light.

Aconite will often be required, either in alternation with one of the other remedies, to control undue febrile excitement, and to remove the violent, congestion, which now and then occurs in iritis.

Mercurius-corrosivus.—*Case by Dr. Henderson, of Edinburgh.*—A gentleman in May, 1852, had inflammation of one eye, declared rheumatic by an eminent oculist in Glasgow. Bleeding, Calomel, and Opium rapidly improved the eye, but the mouth and tongue became sore and inflamed, which confined him to the house for a month, part of the time in bed. He afterwards relapsed several times within the month, though the attacks were not severe. During the winter he was well, but in March, 1854, he had a new and severe attack. The sclerotica around the cornea was closely and densely injected with vessels and so deeply colored as to present the appearance of ecchymosis; aching pain in the eyeball; the iris dull color; pupil regular,

though somewhat dilated. The disease had lasted four days when the second homœopathic dilution of corrosive sublimate was prescribed one drop every four hours. Each dose therefore consisted of only the ten-thousandth part of a grain of the medicine. In four days the eye was nearly well, and on the fifth day of the treatment the patient was in perfect health. He had taken five doses per day of the medicine. In a few weeks he had a slight relapse, which was cured by the same remedy without confining him to the house. No mercurial disease accompanied this mercurial treatment.

CLEMATIS.—Rheumatic iritis; sensation of pressure upon the eyes, with photophobia and lachrymation, particularly in the open air; lids forcibly contracted in the morning, with sensation of heat.

ADMINISTRATION.—The remedies may be employed at the first, second and third attenuations, depending upon the age and susceptibility of the patient, and the violence of the inflammation. The dose should be repeated in acute cases every two hours, until we are certain of a medicinal impression upon the diseased texture. In less urgent cases, a repetition will suffice once or twice in twenty-four hours.

Belladonna, and its alkaloid Atropine, are among the most powerful remedial agents in acute iritis. Mercurius, which is also truly homœopathic to this disease, agrees very well in alternation with Belladonna. It also acts well internally while Belladonna is applied externally.

Græfe advises in the slighter cases of acute iritis the application of a solution of Atropine (four grains to one ounce of water), six, eight, or ten times a day, and in severe cases as often as twenty times in the twenty-four hours.

When synechia posterior with broad and extensible adhesions exists, the tendency to the recurrence of iritis is so great, that the patient and doctor are both ready to adopt the severest measures—even extirpating the eyeball, to get rid of the ever-recurring torment, and to prevent the sound eye from participating sympathetically with the diseased one. In such cases Græfe performs *iridectomy* by excising a small portion of the iris. This treatment he has found efficacious in apparently the most desperate cases, where the anterior chamber was almost effaced, the iris discolored and bulging very much forwards, and the globe of the eye softer than natural and perfectly atrophied. He has repeated the operation on the same eye sometimes as often as six times, and with great advantage. The iris regains its healthy appearance, the anterior chamber refills with aqueous humor, and the whole globe becomes firm. The sight too is restored more or less perfectly.

The rationale of the cure in these cases is not very clearly made out. Von Græfe says: “The increased power of vision *was in no way dependent on re-absorption of the pupillary exudations, but was*

entirely to be ascribed to an improvement of the choroidal complications."

Mode of performing the Operation of Iridectomy.—The lance-shaped knife is introduced into the sclerotic, at the distance of half a line from its junction with the cornea, and pushed forwards into the anterior chamber. Through this wound the forceps is introduced, the iris seized and dragged out, and a portion, amounting to a fifth or even a third of the whole, cut away. The remains of the prolapsed iris are left in the wound.*

3. CHOROIDITIS.

The commencement of organic disease of the choroid, though unattended by marked symptoms of inflammation, is still a serious matter, as inflammation often breaks out suddenly.

The existence then of the network or gauze, or appearance of large spots in the field of vision, unaccompanied by pain or uneasiness, or any other evidence of increased action in the vessels of the conjunctiva or sclerotica should meet with prompt attention.

The organ should have perfect rest and be kept from exposure to bright light. Counter-irritation in the vicinity has been found partially successful; stimulating drinks are to be avoided; food should be regulated to that extent that the patient's condition may direct. The patient's general health must be corrected.

Bleeding has formerly been considered indispensable; but in many other cases those who have tried it, found the bleeding to aggravate the disease; in young, delicate females, Mr. Tyrrell (*Encyclopedie of Surgery*, p. 90) saw "the continuance of the depletory treatment most injurious in augmenting the morbid action and hastening the disorganizing process." Unfortunately, as relief frequently follows the local abstraction of blood, the patient on every fresh attack or relapse is desirous of resorting to the same treatment again; still finding the relief of short duration; the same course is resumed with temporary benefit, but the powers of the patient are successively reduced, and the local disease makes progress in disorganization; each relapse promotes further inflammation, and the anti-phlogistic treatment lessens the powers of the system to resist the progressive amaurosis; and, eventually, vision is completely destroyed, and the général health is at the same time materially injured. Mr. Tyrrell says: "I have seen several distressing cases of permanent amaurosis resulting from such treatment, and I have also known many instances in which the disease has been

* Memoirs on certain forms of Iritis, Choroiditis, and Glaucoma. Sydenham Society. 1859.

arrested and vision preserved by raising and maintaining the general powers" and pursuing a proper medical treatment.

TREATMENT.—*Ipecacuanha*.—In one case the following symptoms were presented: A lady, aged 47, had excessively painful shootings in the eyeballs, could not gaze on any object without copious flow of tears; blue and red halo around the flame of a candle; pupils neither dilated nor contracted, and moved freely; vessels of the palpebral conjunctiva slightly injected without pain; conjunctiva and cornea uninjured; constipation; no known cause for the inflammation. At the end of six weeks Dr. Tamhayn, in remembering the resemblance of the symptoms to those produced by the dust of Ipecacuanha on a pill-maker employed in a druggist's shop, prescribed that article.

Jan. 15th, 1858. Ipecac. twelfth dilution, two globules in 200 grammes of water; a table spoonful three times a day for six days. Jan. 22d, the suffering was less, gazed on objects with less difficulty; the halo around the candle less visible; bowels improved. Ipecac. sixth dilution, two globules. Jan. 29th, improving. The patient can read and work in the daytime. Continued improvement, though some occasional shootings in the eyes, more in the left eye or that first affected. Diarrhoeic evacuation about every morning. Ipec. twelfth dilution, two globules.

Dr. Heniel, of Paris, gives a case in which there were lancinations excessively painful in the optic globes, copious flow of tears on looking steadily at any object. Blue and red aureoles surround the flame of the candle; pupil mobile; no external inflammation, slight injection of the palpebral conjunctiva. Such symptoms had been caused in a druggist, pounding Ipecac., and it was prescribed Ipec. 12°, a two globules in water, three times a day for six days. The first week after there was improvement; constipation removed. A week later, could see to read and sew in daylight. (*L'Art Medical*.)

Ammoniac.—“A glittering appearance before the eyes as of molten metal.” (Dr. Kleinert.) In this case, inflammation of the deeper-seated parts, the choroidea, &c., is present, with which amaurosis often commences. Traces of the change must be perceptible in the provers by the aid of the ophthalmoscope.

Muriatic-acid.—Perpendicularly hemiopia; thus partial paralysis of the optic nerve, perhaps exudation—extravasation of blood on the choroidea.

Alumina causes vision of yellow, perhaps perceptible on the corpus vitrei and the aqueous humor,—a purely icteric symptom which may appear on other parts of the body.

Mercury.—Amaurosis consequent on chronic choroiditis, is often if not always pathologically identical with mental imbecility consequent on chronic meningitis. In the first case the delicate structure of the retina, vesicular neurine which is expanded on the optic nerve,

has been pressed upon by its vascular serous membrane, and the choroid and membrani Jacobi are thickened by a morbid deposit. In the second the vesicular neurine of the hemispherical ganglion is pressed upon by the thickened pia-mater and arachnoid. The success of treatment in inflammations of the eye should encourage us to make efforts equally persevering in the treatment of chronic meningitis. Mr. Tyrrell cured most obstinate cases of amaurosis by persevering in the use of *minute* doses of the gray mercurial powder every night or every second night for twelve months, taking care in all this time that it should never affect the mouth. He even said that he had often seen the cure arrested, and sometimes entirely defeated by salivation, in cases in which it occurred through the impatience of the invalid, who was too anxious to be *speedily* cured. By long persistence he said he had "restored many a poor fellow to sight whose case had been considered hopeless."

4. AMAUROSIS.

Impaired vision coming on suddenly or gradually, and the loss of sight more or less complete; it may be permanent from its first accession, or transient, varying in degree, and returning only at intervals, sometimes in the day only or in the night only. It sometimes comes on after great exertion of the eyes with minute or very bright objects, or when the digestive powers are greatly disordered. In some cases the loss of sight is confined to a part of the field of vision; or objects appear crooked, distorted, mutilated, changed in size, or inverted; flashes of light; shining stars, globes of light, or muscae volitantes, are common when the retina is inflamed; when the vital energies of the organ are exhausted, as in dyspeptics or debilitated persons; motes, black specks, muscae volitantes and thick mists of clouds are seen; double vision is caused by disease within the cranium. At a later stage the vision is obscured by clouds, or a net-work of gray, black, or white silvery, luminous red, luminous in the dark. In some cases pain is felt in the eyes, in others there is only a desire for stronger light, in others there is dryness of the eyes and nostrils; the constitution generally presents some peculiarities indicating hereditary disease, or functional derangement of important organs; there is a staring, unmeaning look in the eyes; an unsteady, uncertain gait; the motions of the eyes or eyelids may be impeded or palsied; the eyes unusually prominent; the sclerotica bluish, or ash-colored, and, in some, covered with small varicose veins; the eyeball is firmer to the touch or softer than natural. After vision is extinct, the pupil is more or less expanded and motionless, though when only one eye is amaurotic, the pupil of that eye follows the motions of the sound one. Sometimes both eyes

are amaurotic, and yet the motions of the iris continue under the nervous influence of subsidiary nerves, particularly of the branches of the third and fifth pair. The iris may contract irregularly, may protrude towards the cornea or be pressed inwards.

DIAGNOSIS.—Distinguished from cataract by the dimness, or loss of sight, being either sudden or partial, presenting the appearance of fly-spots, or motes covering parts of an object. In cataract, the difficulty of sight increases very slowly, and is compared to a diffused mist, thin cloud, or gauze, intervening between the eye and the object. Amaurosis, if in its first stages a cloud or mist be visible, goes on increasing till sight is extinct; but complete deprivation of sight never occurs in cataract. In cataract the opacity generally commences in the centre of the lens, and the misty appearance is most noticed when looking directly forward, vision being most distinct when he looks sideways; this seldom occurs in amaurosis. In amaurosis the patient desires strong light; in cataract strong light contracts the pupil and renders vision less perfect, as the rays have to pass through the central opaque part of the lens. Amaurosis is usually connected in its origin with headache, vertigo, and disease of the digestive organs. Cataract has seldom any such association. In amaurosis the pupil is either jet-black in health, or a pale greenish color visible when examined in a particular light. (*Copland. Vol. I., p. 65.*) In *amaurosis* with *glaucoma* the opacity is always greenish, in incipient cataract it is always grayish. In the former the opacity seems at a considerable distance behind the pupil; in lenticular cataract it appears close behind the pupil. In posterior capsular cataract the opacity is streaked, in glaucomatous amaurosis it is always uniform. In the former the opacity seen through a double convex lens appears slightly rough; the glaucomatous opacity is smooth and polished. In the former the eyeball is of the natural degree of firmness; in glaucomatous amaurosis it is firmer than natural. Glaucoma progresses slowly, occupying several years; in cataract the sight rapidly declines. In incipient cataract the contractions of the pupil are as extensive and rapid as in health; in *amaurosis* it is dilated and fixed, or its motions are limited and slow. In cataract the movements, eyeballs and eyelids are perfect; in *amaurosis* they are imperfect and difficult, there is a want of direction to the eyes, and sometimes a slight degree of strabismus. (*Mackenzie, on Diseases of the Eye.*)

SYMPTOMS.—The partial or total loss of sight which particularly characterizes this disease, is principally dependent upon a diseased condition of the optic nerve and retina, although other structures occasionally participate in the disease. Amaurosis occurs at all ages, and in both sexes, but is most common at the period of the cessation of the menses in females, and at the age of forty or fifty years in males.

The chief circumstances which predispose to it, are: a plethoric and sanguine temperament; hereditary pre-disposition; tendency to sanguineous congestions to the head and eyes; and an impaired constitution from the abuse of drugs, stimulating drinks, and venereal excesses.

Physicians of the old school are much divided respecting the nature and treatment of amaurosis; some suppose it to be a debility requiring tonics and stimulants, while others describe it as an inflammatory affection, demanding an antiphlogistic course of treatment. In view of these discordant opinions, and the empirical modes of treatment based upon them, it is not surprising that so few amaurotic patients are cured by allopathic treatment.

Amaurosis may be imperfect or perfect. In the former there is a partial, and in the latter a total loss of sight. In the first, the patient sees as through a gauze, or but half of the object, or double, or only when the eye is in a particular position, with respect to the object; while in the last, the patient cannot distinguish day from night.

The signs of the approach of the disease are: pain in the forehead and temples, diminishing with the advance of the amaurosis, and ceasing when it has become complete; vertigo; weakness and cloudiness of vision, apparent when looking at distant or at minute objects; sparks and moats, or muscæ volitantes, float before the eyes, annoying the patient, and impairing the sight; in reading or writing, a stronger light than usual is demanded; a slight diminution in the brilliancy of the pupil.

After these precursory symptoms, the loss of vision gradually becomes more complete, until after months or years there remains a condition of settled and more or less perfect amaurosis. In other instances, the disease advances with rapidity, and terminates in partial or total blindness in a few days. But it is not an uncommon occurrence for complete amaurosis to follow instantaneously, leaving the victim in blindness so profound that he cannot distinguish light from darkness. When either of these three conditions obtains, there are usually but few signs which indicate the presence of so serious an affection; the principal symptoms being only a dilated and immovable pupil, a loss of contractile power in the iris, and occasionally slight strabismus. But even these signs are not uniformly present; for cases of complete amaurosis are reported, in which the pupil remained natural, or became preternaturally contracted, and mobile on exposure to light, and in which the iris and all other visible parts of the organ were in a normal condition. The color of the pupil in this disease is ordinarily jet-black, with, perhaps, a very slight diminution of its natural brilliancy, but it sometimes presents a red, greenish, or white and cloudy appearance. Cases of this last description are often mistaken for incipient cataract, and when the loss of sight is but partial, it is not easy to distinguish between the

two maladies; but the following characteristics will afford us material assistance in deciding the matter. In cataract, the dense white appearance is situated immediately behind the pupil, while in amaurosis the cloud is more deep-seated. In the former the flame of a candle appears to be surrounded by a thin, white, diffused mist or cloud, "which increases with the distance of the light," while in the latter, "a halo or iris appears to encircle or emanate from the mist, the flame seeming to be split when at a distance." (Stephenson.)

The shape of the pupil is usually round, but somewhat more dilated than in the normal state, thus allowing a large number of luminous rays to enter the eye. In a few cases it loses its circular form, and becomes angular.

Amaurosis is attributed by most writers to a paralytic condition of the optic nerve, retina, or to some disease of the thalami nervorum; but does not the peculiar immovable condition of the pupil and iris, when their natural stimulus, the light, strikes them, indicate a loss of sensibility and contractility in these structures? And does not the partial loss of voluntary power over the globe, which occurs during the progress of the disease, indicate a loss of tone in the whole organ?

We have mentioned, as one of the precursory symptoms of amaurosis, floats and muscae volitantes before the eyes. In the imperfect form of the disease, these appearances vary much in their character, and are a source of great annoyance to the patient. Sometimes a single black speck obstructs the sight; sometimes there is an appearance as if a dark gauze or net-work were before the eyes; sometimes as if flies, small objects of different forms, sparks, fireballs, and various colored lights, were moving in various directions. The objects are more troublesome in a strong light than in dark situations, being in the former of a black or sombre color, and in the latter presenting themselves in the appearance of sudden flashes of light or fire.

We are occasionally presented with the disease in an intermittent form, and, in rare instances, as a temporary attendant of some particular morbid condition of the system, like pregnancy, disordered menstruation, hysteria, worms, and the irritation of indigestible food.

In addition to the symptoms already described, we sometimes observe in young and plethoric amaurotics, strongly pronounced determination of blood to the head and eyes, a constant stupefying headache, more or less redness and congestion of the eyeballs, sensitiveness of the eyes to light, a full and hard pulse, a sense of fullness, tension, and pain in the affected eye.

It is a point worthy of note, that *black* eyes are far more subject to amaurosis than *blue* or *gray* eyes. Beer supposes that where one blue or gray eye becomes amaurotic, at least twenty-five or thirty black ones

suffer. No satisfactory explanation has ever been suggested for this comparative exemption of blue or gray eyes.

Characteristics.—Distinguished from cataract by the dimness or loss of sight being either sudden or partial, resembling a fly, spots or motes covering parts of an object. In cataract the difficulty of sight increases very slowly and is compared to a diffused mist, thin cloud or gauze intervening between the eye and the object.

PROGNOSIS.—When the cause of the disease is evident, and which can be removed, the patient young, constitution good, and the attendant disease curable, partial or entire recovery may be hoped for. When it has been suddenly induced, the pupil being only slightly dilated and still moveable, of the natural form and the eyeball not altered in structure, the prognosis is more favorable than when the pupil is fixed in a state of either expansion or contraction, or when the eyeball is either soft or preternaturally hard, or when the back part of the eye presents a greenish opacity. If the attack has been sudden, the vision perverted, power over the muscles of the eyelids lost, there may be disease within the brain. If the symptoms have been gradually developed in succession, there may be a tumor, cyst, or exostosis within the cranium; and in all such cases the prognosis must be unfavorable; and also in all cases in which the cause has been long in operation, the loss of sight has been very gradual, the constitution is much impaired, and the cause cannot be speedily removed.

Amaurosis depending on morbid growths within the orbit or cranium, may be considered incurable; but when it depends upon a slight effusion upon the brain, or the pressure of a tumor upon the jugular vein of the neck, we may often effect a cure by causing the effused fluid to be absorbed or removed by an operation, or the extraction of the offending tumor. We once cured a case of several months duration by removing from the neck a tumor of the size of an orange, and thus renewing the free course of blood from the head. The sight returned almost immediately after the operation. The loss of sight which sometimes accompanies pregnancy and intermittent diseases, often subsides spontaneously after parturition, or the cure of the disease, on which the blindness depended. A favorable prognosis may commonly be entertained in those recent cases which depend on congestion of the optic nerve, retina, or thalami nervorum opticorum, arising from general plethora, suppressed menstruation or haemorrhoids. The effects also of mechanical injuries, lacerations, contusions and blows upon the eye, may frequently be cured.

CAUSES.—*First.*—*Predisposing.*—Hereditary disposition; dark eyes; insolation; forced mental or physical exertion; excesses of passion; pregnancy and the puerperal state; habitual stooping; indigestion; abuse of stimulants; suppressed discharges; menstrual derangements;

gout, rheumatism or scrofula; retrocession of eruptions; habitual constipation; chronic diarrhoea; typhoid fevers; use of snuff; long continued grief; nursing too long continued; leucorrhœa; masturbation; excessive exercise of the sight on minute objects or in bright glaring light; strumous ophthalmia.

Second.—Exciting Causes.—Over-exertion of the sight; very bright light, working with minute objects by lamp or gas light at late hours; strong shocks of electricity, as lightning; long continued over-excitement of the eye; or mechanical injuries producing contusion or concussion of the retina; strong poisons as stramonium, belladonna, poisonous fungi, and fish-poison; epileptic or other convulsions; apoplexies or paralysis; injuries of the fifth pair of nerves; gastric or intestinal irritation, from worms or other causes; hypochondriasis; accumulations of bile; frights; neuralgia, with or without carious teeth; drying up of old ulcers; cessation of the menses; typhoid fever or scarlatina; metastasis of gout or rheumatism; syphilis and abuse of mercury.

The causes of amaurosis may operate upon the brain itself, upon the optic nerve, or the retina. They may be divided into constitutional, and local causes. In the first class we include: repeated and protracted determinations of blood to the head and eyes, by unusual physical or mental exertion; pregnancy; suppression of natural or habitual discharges; violent vomiting; excessive indulgence in venery; masturbation; unbridled anger, grief, and other passions; abuse of stimulants; large doses of opium, lead, belladonna, hyoscyamus, stramonium; abuse of bitter medicines, as quassia, cinchona, chamomilla, chicory, &c.; exercise in a hot sun; general debility; derangement of the digestive organs; the depressing emotions; the pressure of tumors upon the vessels of the neck in such a manner as to prevent the return of blood from the brain.

We include in the second class of causes, morbid growths within the orbit: mechanical injuries of the eye; sudden transitions from darkness to a brilliant light; lightning; frequent use of optical instruments, like the telescope and microscope; exostoses within the cranium; sanguinous effusion upon the brain; injuries of the head.

PATHOLOGY.—First.—Amaurosis is perhaps always dependent on some physical change in the structure of the eye, though this is not always perceptible on dissection. *Functional* amaurosis, says *Beer*, proceeds from direct depression of the vital sensibility of the eye; or from inordinate excitement, and consequent exhaustion of this property. *Mackenzie* thinks that in all these cases there is a certain degree of *organic* derangement, even when dissection does not reveal it. In nearly all cases there is sensible organic derangement.

Second.—Congestive or inflammatory state of the retina or parts adjoining:—Varicose states of vessels; unusual injection of the

minute arteries of the adjoining coats and of the retina; complete *retinitis*; exudations of lymph under the choroid; inflammation of the external surface of the sclerotic; injection of the choroid and adhesion of the retina to it; thickening, morbid density of the retina; change of color and ossification or wasting of the retina.

Third.—*The optic nerve* may be compressed or otherwise affected by structural changes in parts contiguous to it. (*Copland*, Vol. I., p. 59.)

Fourth.—*Disease of the Brain* or its membranes may cause amaurosis by impeding the functions of the optic nerves, although the structure of these nerves be uninjured. The most common of these are: organic lesions of the pineal and pituitary glands, sanguinous and serous effusions, tumors, abscesses, softening of the brain.

TREATMENT.—A complete removal of all suspected causes is the first step. When the general symptoms denote debility; when there is languid circulation, *muscae volitantes*, or dark spectra, an alterant, though supporting treatment is required; light, nutritious, invigorating diet, change of air, moderate exercise, vegetable and mineral tonics, with the usual means of improving the secretions constitute the usual measures for restoring the nervous energies of the debilitated organ.

When the disease is obviously connected with inflammatory action it is of that character which is not always benefitted by depletion. Perhaps the most common form of amaurosis is that consequent on *chronic choroiditis*, which is believed to be pathologically identical with that which exists in the brain in mental *imbecility*, consequent on chronic meningitis. In the former case, says Mr. Solly (*On the Brain*, p. 357), “The delicate structure of the retina, the vesicular neurine which expands on the optic nerve, has been pressed upon by its vesicular and serous membrane, the choroid and membrana Jucobi, thickened by morbid deposits.” In imbecility from chronic meningitis the vesicular neurine of the hemispherical ganglion is pressed upon by the thickened pia mater and arachnoid. This view of the pathology in many cases of amaurosis has led Mr. Tyrrell, of London, to a successful course of treatment. By persevering in the use of extremely small doses of Mercury every night or every second night for twelve months, Mr. Tyrrell has succeeded in curing most obstinate cases of amaurosis. By employing such minute doses that no drug symptoms are produced Mercury will often restore the sight in amaurosis, even when the perception of light is destroyed; it is not entirely hopeless if the globe retains its natural consistency; neither abnormally hard, or soft and shrunken; when the disease is of very long continuance, then the retina and vitreous humor become sometimes implicated in the morbid action and partial atrophy ensues.

Tyrrell says: “The safety of the treatment and its efficacy depend greatly on the support of the general powers; for while this is properly

sustained, the remedy can not produce any general injurious effect, though its operation on the local disease may proceed most beneficially." If the general powers are not maintained "the effects of mercurial action on the system are extremely distressing and injurious, and it can rarely be continued long enough to remedy the amaurosis."

Case by Mr. Tyrrell.—"A man, aged thirty-eight, had been amaurotic for seven years. He had lost the perception of light; the globes possessed their natural firmness and elasticity; the pupils were clear, but irregular, from many points of adhesion between the pupillary margin of the iris and the anterior capsule of the lens; the irides were discolored and dull, and he had the vacant aspect of a blind person. Mercurial treatment was tried with good diet; but the mouth became tender and scleritis occurred. But the treatment was continued, and Belladonna was applied night and morning to each eyebrow. He soon became sensible to light, and gradually acquired the power of discerning objects; and the adhesions between the irides and capsules of the lens began to give way; the pupils to assume their natural figures; by degrees the vision improved, inflammation subsided; the pupils became regular and the irides brilliant. The Mercury was continued for above sixteen weeks, when the amaurosis was completely subdued, and vision perfect." In this case it is evident that Mercury in an attenuated form would have cured the amaurosis and left the patient in a better condition for permanent health. In brain affections we should be guided by similar principles.

TREATMENT.—The specifics for the different forms of amaurosis are: *Belladonna*, *Nux-vomica*, *China*, *Phosphorus*, *Ruta-graveolens*, *Stramonium*, *Sulphur*, *Euphrasia*, *Arnica*, *Cannabis*, *Hyoscyamus*, *Stramonium*, *Opium*, *Secale*.

Belladonna.—*External Indications.*—Pupil dilated and immovable; strabismus; pupil black and round or angular; partial or total loss of vision; listless expression.

Physical Sensations.—Power of vision diminished or extinct; sensation of weight and pressure in the eyeball; throbbing or stupefying headache; objects appear double, or wrong side up, or half concealed, or blurred, or surrounded by a fog or mist; dark, fiery and red bodies float before the eyes; bright flashes before the eyes; the candle seems surrounded by a halo of different colors; but in which the red predominates.

MENTAL AND MORAL SYMPTOMS.—Mood generally irritable, but high spirits alternating with despondency.

REMARKS.—This remedy is called for in amaurotics of full and plethoric habits, and where the malady has been caused by inflammation, congestion of the optic nerve, retina, or some part of the brain.

Nux-vomica.—*External Indications*.—Pupils contracted, sometimes dilated; spasmodic motions of the eyeball; photophobia.

Physical Sensations.—Intermittent obscuration of vision; black or gray moats before the eyes; stupefying headache; weakness of sight, worse in the light of day; luminous vibrations on the side of the eye; vertigo.

MENTAL AND MORAL SYMPTOMS.—Disposition melancholic and hypochondriacal.

REMARKS.—*Nux* is applicable in amaurotic complaints arising from excess of study and abuse of stimulants and opium. It is also indicated for temporary loss of sight, which sometimes accompanies intermittent diseases.

China.—*External Indications*.—Pupils dilated and insensible, or slightly contracted; a white cloud deep within the eye; photophobia.

Physical Sensations.—Indistinct and confused vision; muscle volitantes; sudden obscurations of sight; only the outlines of objects can be discerned; general debility; irritability; morbid sensitiveness of the whole system.

MENTAL AND MORAL SYMPTOMS.—Disposition cheerful and languid.

REMARKS.—*China* will apply when the disease is of a purely atonic character, and has originated from excessive loss of blood or pus, or from protracted chronic or acute diseases.

Phosphorus.—*External Indications*.—Pupils and eyes natural.

Physical Sensations.—Sudden attacks of blindness during the day distant objects appear to be enveloped in smoke or mist; black spot before the eyes; diminished vision; he sees as through a net-work of gauze; sparks before the eyes in the dark; tremulous vision; luminous vibrations before the eyes; the flame of a candle seems to be surrounded by a green halo.

MENTAL AND MORAL SYMPTOMS.—Spirits gloomy, dejected, and without any cheerful reaction.

REMARKS.—In *amaurosis* consequent on masturbation, loss of animal fluids, and in impoverished old people, *Phosphorus* is an excellent remedy.

Ruta-graveolens.—*External Indications*.—Pupils contracted; involuntary movements of the balls of the eyes; spasms of the lids.

Physical Sensations.—Sense of weight and pressure in the eyeballs; weakness of the eyes; inclination to read or write by a very strong light; muscle volitantes; red halo surrounding the flame of a candle; cloudy vision; weariness of the eyes.

MENTAL AND MORAL SYMPTOMS.—Indifferent, irresolute and peevish.

REMARKS.—Amaurotic complaints arising from abuse of the eyes with optical instruments, in reading fine print, or working at small ob-

jects, and also from contusions, and other mechanical injuries, will require the use of Ruta.

Stramonium.—*External Indications.*—Pupils dilated and immovable; eyes staring, and somnolent or glistening.

Physical Sensations.—Sense of weight and tension in the eyes; obscuration of sight; objects appear small or double; black colors appear gray; sparks and specks float before the eyes; objects seem surrounded with a red or light border; cloudy vision; vertigo; headache.

MENTAL AND MORAL SYMPTOMS.—Disposition irritable and touchy; hysterical and cataleptic.

REMARKS.—*Stramonium* is suitable in paralytic affections of the optic nerve and retina; connected with deranged menstruation, hysteria, epilepsy and catalepsy.

In incipient amaurosis, and frequent and sudden and short attacks of blindness, we may refer to *Sulphur*, *Euphrasia*, *Arnica*, *Cannabis*, *Hyoscyamus*, *Conium*, *Aurum*, *Digitalis*.

ADMINISTRATION.—We are in the habit of employing from the first to the sixth attenuations. Repetitions should not be made more than once or twice in the twenty-four hours. As soon as an impression is apparent, we should await the result before administering again.

5. HYDROPHTHALMIA, OR DROPSY OF THE EYE.

DIAGNOSIS.—This disorder proceeds from the formation of a preternatural quantity of the aqueous or the vitreous humors, while the absorbent vessels convey into the circulation only their customary amount of these secretions; or the humors may be formed as usual, but owing to some defect or loss of power of the absorbents, the natural quantity is not taken up and carried into the circulation. But it is highly probable, in most cases, that the disease is dependent on a morbid condition of both the secerning and absorbent vessels, and the normal equilibrium between secretion and absorption becomes thereby destroyed. This idea receives confirmation from the fact, that most dropsies of the eye can be traced to previous inflammation of the internal textures of the organ.

The unnatural accumulation may be confined to the aqueous humor in the anterior chamber, or to the vitreous humor in the posterior chamber, or both humors may be affected at the same time. When the aqueous humor is alone involved, the disease may be recognized by the following marks: dimensions of the cornea larger than natural; increased size of the anterior chamber of the eye; turbid appearance of the aqueous humor; partial or total loss of motion of the iris; pupil natural and immovable; iris less brilliant than natural; sense of weight and tension in the eyeball; weakness of sight; perversion of vision,

either in the form of *presbyopia* or *myopia*: general loss of voluntary motion over the ball; partial or total loss of vision.

When there is a preternatural accumulation of the vitreous humor, the enlargement of the globe is more deep-seated; the ball assumes a conical shape; the cornea is unusually prominent; the pupil is contracted; there is a diminution of vision; myopia; deep-seated pains; tension and heaviness; impaired motion of the ball; and eventually, total blindness.

When the disease consists of an unnatural accumulation of both humors, we shall have a combination of symptoms including nearly all described under the aqueous and vitreous varieties of dropsy. After the vitreous humor has been for some time affected, its character is changed, and it acquires a soft and usually a watery appearance.

In many cases, the eye attains a size so enormous as to protrude far from the orbit, and it is thus rendered quite impossible to close the lids over it. In this condition the patient has a frightful appearance, and the organ itself, from its exposure, is constantly irritated and inflamed.

CAUSES.—The immediate cause of dropsies of the eye is an undue action in the arteries which secrete the humors, and a diminished action of the absorbent vessels; or, sometimes an inordinate aqueous or vitreous secretion, with a normal action of the absorbents.

Hydrophthalmia is generally supposed to depend upon some constitutional cause, like general dropsy, hydrocephalus, chlorosis, or secondary syphilis; but, as a general rule, it may be traced by some previous inflammation of the internal structures of the eye. In infants and young children, it is often exceedingly difficult to discover the real cause, especially when the external indications are obscure, and, on this account, the earlier history of the case can rarely be ascertained; but in adults, we shall often be able to discover previous sub-acute inflammation in the internal structures.

PROGNOSIS.—The allopathists deem this disease, when fully formed, *incurable*. They find that no shedding of blood, no punishment of stomach, bowels, salivary glands, skin, or other inoffensive parts of the body, can cure or palliate it. That the prognosis is unfavorable we do not deny; but we believe the disease may often be cured in its early stages. We have treated but two cases homœopathically; and but one with a favorable result. This was of six months standing, confined to the aqueous humor, and with but moderate distention of the cornea; the other case involved both humors, had continued more than a year, and had arrived at the condition termed "ox eye," when the treatment was commenced. In this instance paracentesis became necessary, and the patient ultimately lost his eye.

So long as the disease is confined to its incipient stage, and even

after the unnatural accumulation has commenced, provided no serious disorganization has taken place in the important tissues of the eye, we may predict a favorable result; but if organic lesions have occurred, and the accumulation in the anterior or posterior chamber is considerable, with total loss of sight, our prognosis must be unfavorable.

TREATMENT.—If the dropsy depends upon a constitutional fault, our remedies must be addressed to the remote difficulties. So long as these continue, mere local means will be inadequate to accomplish our object; but constitutional and local remedies may be used in alternation with probable advantage. If the eye be much distended, and medicines do not act with sufficient promptness and energy, the operation of paracentesis may be made to evacuate the superabundant humors, after which the remedies will generally prove sufficiently powerful.

We believe the following to be the best at present known: *Belladonna, China, Pulsatilla, Mercurius, Hyoscyamus, Stramonium, Conium, Nux-vomica, Arsenicum, Plumbum, Aconite, Sepia, Sulphur.*

It is doubtful whether either of these exercises a positively specific influence upon the secretory and absorbent vessels affected in hydrophthalmia, but they are capable of acting upon the generally morbid condition upon which the local disorder depends; they thus aid in arresting its progress, and occasionally in effecting cures.

ADMINISTRATION.—In the same manner as advised in *amaurosis*.

6. C A T A R A C T .

DIAGNOSIS.—Strictly speaking, this disease belongs to the province of surgery rather than that of medicine; but as homœopathy promises results somewhat important in a medicinal point of view, we take the liberty of presenting a few words respecting the malady in this place.

By the term cataract is understood, an opacity of the crystalline lens, or its capsule, which causes an obscuration, or a total loss of vision. Authors recognize and describe several varieties, both of the lenticular and capsular cataract, and among the most common are:—

First.—The *firm* or *hard cataract*, peculiar to old people, and recognized by its amber color, small size, and by its density and hardness. Vision is never totally destroyed in these cases, and the structures of the eye retain their natural contractility.

Second.—The *fluid* or *milky cataract*, caused by a change of the lens into a white and semi-fluid mass, of so large a size as to nearly obliterate the posterior chamber, impair the motions of the pupil, and prevent the admission of rays of light.

Third.—The *soft* or *caseous cataract*, which presents an appearance somewhat similar to the last variety, with the lens much enlarged,

of a cheesy consistence, and of a light gray or sea-green color, obliteration of the posterior chamber, impaired motion of the pupil and iris, and either partial or total blindness. The lens in this variety, always presents an appearance of more firmness and consistence than in the milky cataract, and the dark irregular spots or lines which sometimes traverse it, remain the same in all positions of the head, while those which are now and then observed in all the milky variety, change their location with every motion of the eyes.

Fourth.—Capsular cataract, consisting of an opacity of the capsule of the crystalline lens. The opacity commences at the margin of the pupil, in the form of "distinct, white, shining points, specks or streaks; its color, therefore, is always very light, and never altogether uniform, even when the disease is completely formed." (*Beer.*) When this kind of cataract occurs in children at or soon after birth, it is called *congenital cataract*.

The capsular cataract does not generally continue for a long period before the lens becomes involved also in the opacity. When the disease has been preceded by a good deal of inflammatory action, we may find cohesions of the anterior capsule of the lens with the urea; or of the whole of the capsule with the lens; or all the three species of adhesion may exist together." (*Beer*, p. 318.)

Cataract is sometimes complicated with amaurosis. This complication is not always easy of detection, on account of the symptoms of these diseases bearing so close a resemblance. When the lens or its capsule are alone affected, the opacity is immediately behind the pupil, the iris and pupil possess some degree of *mobility*, and there is some little appreciation of light; but when amaurosis is conjoined with cataract, we have the same appearance of the lens or capsule, but a *dilated* and *immovable* pupil, an insensible and immovable state of the iris, and an absolute loss of vision.

The first intimation we have of a forming cataract, is defective vision when attempting to read fine print, or to look at minute objects. As the disease advances, all objects appear indistinct; a mist is constantly before the affected eye; a strong light is required to read or write; a small speck now commences just behind the centre of the pupil, and continues to extend until the opacity entirely obstructs the passage of rays of light to the eye; when the opacity is complete, a black ring is seen around the edge of the pupil and the sight continues to diminish until blindness is complete.

CAUSES.—Frequent and long-continued use of the eyes in reading fine print, writing, or looking at minute objects by a strong light; congestion of blood to the eyes, from exercise in the hot sun, in furnaces, and other places where hot and bright fires are kept; exposure of the eyes, irritating fumes and vapors, like sulphurous acid, chlorine and

other gases, and the vapors of sulphuric ether, nitric, sulphuric and muriatic acids, hereditary predisposition, mechanical injuries, wounds of the capsule or lens.

PROGNOSIS.—When the cataract is confined to the lens, or to its capsule, and no complications exist from unnatural adhesions, from amaurotic symptoms, or from serious constitutional disturbance, a favorable issue may be expected. On the other hand, a dilated pupil an immovable iris, a profound blindness, which has been disproportionate to the gradually forming opacity, unnatural adhesions of the capsule, and an irritable and vitiated constitution, will render our prognosis unfavorable.

TREATMENT.—Before resorting to the operation of *couching*, or *extraction*, as is so often done by the old school surgeons, we should always give our medicines a fair trial. It is quite true that we have but few remedies which simulate this affection in their pathogenesis, yet the successful results which have been observed from the use of medicines in a few cases, render it incumbent on us to avail ourselves of them on all proper occasions.

After a thorough trial with medicines, like *Silicea*, *Graphites*, *Kali-kyd.*, *Merc.-hyd.*, *Calc-carb.-ac.*, if there is no prospect of amendment, the patient should be turned over to the surgeon for the necessary operation.

In a few cases of incipient cataract, much benefit has followed the local employment of sulphuric ether vapor to the eye, and should our internal remedies prove fruitless, there can be no objection to a trial of this substance.

As internal remedies we suggest: *Silicea*, *Graphites*, *Iodine*, *Merc.-hyd.*, *Conium*, *Pulsatilla*, *Magnesia-carb.*, *Sulphur*, *Cannabis*, *Phosphorus*, *Digitalis*, *Spigelia*, *Euphrasia*.

Conium and *Cannabis* may be employed where the cataract has arisen from a wound or other injury to the eye.

Magnesia-carbonica, *Pulsatilla*, *Digitalis*, and *Phosphorus*, have proved curative in capsulo-lenticular cataract, either with or without abnormal adhesions, also in opacity of the lens or capsule alone. These remedies are useful when the disease has been accompanied with ophthalmia.

Sulphur is appropriate in those cases which seem to be connected with a scrofulous or psoric diathesis. It has also been found curative in cataract complicated with amaurosis.

Euphrasia, or *Spigelia* may sometimes be alternated with *Sulphur* with benefit.

ADMINISTRATION.—The same as in *amaurosis*.

A case is given by Dr. J. Mouremans,* of a lady, aged 77 years,

* L'Homéopathe Belge.

who had been blind four years. She is small, emaciated, of sallow complexion, mother of three children. Vision had become impaired gradually several years ago after inflammation of the eye. She then saw snow-flakes and spider-webs in the atmosphere. In 1858, April 29th, she could hardly distinguish light from darkness; pupils dilated and mobility of the iris partially impaired, crystalline lens obscured, of whitish color, and uniformly shaded; no pain; inability for four years to continue her occupation. Euphrasia 30th, May 16th, improvement, continue Euphrasia, higher potency, three globules at once.

Aug. 4th. Begins to distinguish objects but they look distorted. Cannabis 30, continued till Dec. 1. Condition not changed. Sulph. 200, three globules given at once. March 2d. The crystalline lens appeared less clouded. Could distinguish persons though as in a mist. Causticum 200.

April 30th. Still saw black spots before the eyes; but vision improving, Silicea 30. At the end of May, the patient overjoyed at her condition, can readily distinguish all objects; could recognize the letters in a book; that she could devote herself again to her former occupation. Sees a halo around the light of a candle. Phosphorus 30.

Two months later, she came to render thanks for the benefits she had received. Her vision was so far improved that she could thread a needle, could sew and could read with ease. Three years afterwards the sight continued good.

7. GLAUCOMA.

Mr. Hancock says he does not regard the disease merely as a choroiditis, or irido-choroiditis, with infusion into the vitreous and aqueous humors, as this view seems to regard results rather than causes. He believes "that glaucoma, whether acute or chronic, is essentially a disease of the blood and the blood-vessels, and that the effusion or infusion, as it may be described, is the result of this condition, which if not arrested, sooner or later destroys sight." He does not rely on any operation for the cure of glaucoma, relying mainly upon constitutional remedies.

"In acute glaucoma," says Mr. Hanson, "the eyeball is constricted and marked by a circular depression at the point corresponding to the ciliary muscle, whilst the vessels around this part are gorged to a great degree. The eyeball is elongated in its antero-posterior diameter, and the cornea lessened in all its diameters, and rendered more conical than natural; whilst, when the patient turns his eyeball sideways, irregular bulging of the sclerotics (Staphyloma), is exposed to the view. In one or two cases, also, in which I performed iridectomy, the pupil was dilated to excess, and the iris so tense and rigid that it resembled a cat-gut, and could with difficulty be drawn through the wound." The

of the eyeball, produced by a superabundance of fluid within it, which is probably exuded from the choroidal vessels and distends the vitreous humor." "The eye being an organized living tissue, having a locular or cellular arrangement, the distention of its loculi with dense fluid, as serum, would give the whole tissue an unnatural turgidity, and stiffness. The fluidity of the organ, which occurs later in the disease, depends upon the breaking up of its dissepiments, when it shares the atrophy which finally involves all the ocular structures." Von Græfe long ago demonstrated a flattening of the cornea in this disease, "by comparing the size of the image which the flame of a candle forms upon the glaucomatous cornea with that which it forms upon the healthy cornea of the other eye;" it is "immediately apparent that the glaucomatous cornea furnishes the larger image, proving that its outline has a larger (flatter) curve."

"The excavation of the optic nerve entrance" is explained in the Jacksonian prize essay on "Diseases of the Retina," Dec. 1860. (*Archiv für Ophthalmologie.*) It is there shown that "the optic nerve entrance constitutes the weakest, the most yielding point in the fundus, where the first visible effects of excessive pressure would naturally be expected." (*Medical Times and Gazette*, Sept. 1, 1860, *London Lancet*, Feb. 1861, p. 144.)

SURGICAL TREATMENT.—Von Græfe first attempted to treat it by paracentesis of the eye, and he accordingly performed this operation repeatedly in a large number of cases; but of these only two were permanently cured, though there was temporary amelioration in most.

He next attempted to produce "permanent diminution of the intraocular pressure" by iridectomy; but the general result was not very satisfactory; it seemed only to cause rather a refilling of the atrophied or softened eye. The result, however, of the same operation "in ulcerations and infiltrations of the cornea" gave hopes of further advantages in the other cases.

Cases, in which this operation was performed.—First:—In the premonitory stage of glaucoma. In this it was successful, even when this stage had lasted a long time.

Second:—Early stage of acute inflammatory glaucoma. "Vision was perfectly restored in all cases in which the operation was performed before the termination of two weeks from the occurrence of the inflammation." Some of these cases were perfectly desperate, for every trace of the qualitative perception of light had been already extinguished."

Third:—Later period of acute glaucoma. Here improvement was obtained, though less apparent; the improvement was considerable, even after the inflammation had lasted many weeks, "*provided the field of vision was not contracted, nor the optic papilla excavated.*"

In the opposite condition the operation not advised by excrutiating spasmodic pain, which lasted several hours."

He had tried Græfe's method by iridectomy and found it objectionable, from

First:—"The disfigurement resulting from the removal of a portion of the iris, the formation of a coloboma iridis."

Second:—The removal of one-fifth of the iris.

"All agree that the smaller the quantity of iris removed the better. By excision of a portion of the iris, the edge of the lens, with its suspensory ligament passing in front of the vitreous humor to the ciliary process, is exposed to view. To remedy this inconvenience, Mr. Bowman makes an incision above, believing that the cover thus given to the upper lid to the margin of the lens which has been exposed by the removal of the iris contributes to the perfection of vision.

Third:—"The loss of the power of adapting the eye to near objects, which it in some degree retains in chronic glaucoma."

Operation proposed by Hanson.—"Introduce a Beer's cataract knife at the outer edge of the cornea where it joins the sclerotica. The point of the knife is pushed obliquely backwards and downwards until the fibres of the sclerotica are divided obliquely for rather more than one-eighth of an inch. By this incision the ciliary muscle is divided, whilst the accumulated fluid flows by the side of the knife."

8. HYPERMETROPIA.

Defective Power of Accommodation of the Eye.

This disease was first described by Von Græfe in his "*Archiv für Ophthalmologie*, II. 1,179. It has since been thoroughly investigated by Donders. We abridge their views, as presented by another author."*

By hypermetropia is meant that peculiar condition of the eye in which the refractive power of the eye is too low, or the optic axis (the antero-posterior axis) too short; we may, however, have both these causes co-existing. We may also diagnose the hypermetropic eye by its peculiar shape; it appears flatter and smaller than the normal eye, it does not fill out the aperture of the lids, there is a greater or less space (like a little pouch) between the eyeball and the canthus, more particularly the outer canthus.

The *normal eye* unites parallel rays upon the retina with little or no effort of accommodation, but it also possesses the power of accommodating itself without difficulty or annoyance for divergent rays, coming from objects six to eight inches from the eye, for a short time it can

* Mr. J. S. Wells, *Medical Times and Gazette*.

even unite rays upon the retina which come from three to four inches distance. The focal point of the dioptric system lies in the normal eye exactly upon the retina.

In the *myopic eye*, the state of refraction is too great, or the optic axis too long, so that when the eye is in a state of rest, the focus of the dioptric system lies in front of the retina, and parallel rays (emanating from objects at an infinite distance) are brought to a focus before the retina, and only more or less divergent rays are united upon the latter.

"Now in hypermetropia we have just the reverse of this. The refractive power of the eye is so low, or its optic axis so short, that when the eye is in a state of rest, parallel rays are not united upon the retina, but behind it, and only convergent rays are focussed upon the latter.

TREATMENT.—When the eye does not possess sufficient refracting power to converge the parallel rays of light to a focus on the retina, the only successful mode of treatment consists in selecting and adapting to the wants of the individual *convex glasses* which by giving the rays of light a sufficiently convergent direction may neutralize the hypermetropia. The mode of suiting the eye with glasses of the proper convexity is best described by Mr. Wells, according to the theory of Donders.

"The presence of hypermetropia is thus tested. If a person can see distant objects through a convex-glass, he is hypermetropic. The best object is Jæger's test-type. The strongest glass with which the patient can read at a distance of twenty inches gives us the degree of hypermetropia *before* the action of atropine. If this glass be convex 24, his hypermetropia equals $\frac{1}{7}$. The power of accommodation is then to be paralysed by a strong solution of atropine (4 grains to one ounce of water): after this has acted for from two to three hours, the degree of hypermetropia is to be again tested. In young persons with a good range of accommodation, the difference in the convex glass required before and after atropine is often very considerable. In the normal eye the far-point begins to recede from the eye about the age of fifty-five or sixty, the eye becomes hypermetropic, at eighty the hypermetropia may, according to Donders, equal $\frac{1}{7}$.

"Range of Accommodation."—We change the hypermetropic eye into a normal one by means of the suitable convex glass, and then find the nearest point at which No. 1 of Jæger can be read with this glass. If the near-point lies at seven inches, $A = \frac{1}{7}$.

"It has already been pointed out that presbyopia may co-exist with hypermetropia.

"Spectacles."—A person suffering from hypermetropia must be gradually accustomed to wear those glasses which neutralized his hypermetropia after the accommodation was paralyzed by atropine. At first

selvcs are rarely painful. As this condition becomes more aggravated, the patient is obliged to close his eyes and pass his hand over his forehead. Has too persistent an effort been made, all work on near objects must be given up for a considerable period.

PATHOLOGY.—This is little understood. Mackenzie thought the seat of the disease must be sought in the organs by the operation of which the eye adapts itself to different distances. Dr. Derby,* regards "an abnormal structure of the eye as lying at the root of the whole matter." He says:

The results of modern investigation show:—That the agent in the act of accommodation is the crystalline lens, which varies its convexity, without changing its position. That where objects are so distant from the eye that the rays coming from them may practically be regarded as parallel, such rays are brought to a focus on the retina without any accommodative effort; and that the nearer the object approaches the eye, the greater will be the strain on the accommodation.

And while the far-point, or limit of distinct vision of a normal eye, may thus be said to lie in infinity, (rays coming from an infinite distance being parallel) the near point of such eye—*i. e.* the nearest point for which it can accommodate progressively recedes with advancing age, constituting presbyopia when it has increased its distance from the eyes so much so as to cause inconvenience.

Thus in an ideal eye the farthest point of vision should lie in infinity, that is, the eye, when adapted for its farthest point, should possess the power of bringing parallel rays to a union on the retina without accommodative effort.

Relatively few eyes, however, correspond to this ideal. Parallel rays, entering some eyes adapted for their farthest point, are brought to a union *before* the retina, so that only *divergent* rays, proceeding from objects relatively near can form perfect images on its surface. And parallel rays entering other eyes whose accommodative power is similarly relaxed, find their place of union *behind* the retina, to form perfect pictures on which the rays should enter the eye *converging*.

Both of these conditions depend on a defect in the structure of the eye. The first constitutes *myopia*. The second is called by Donders *Hypermetropia* (which see page 137.) Presbyopia may exist in connection with either. In the first case the far-point lies *this side* of, in the second *beyond* infinity. The first requires a concave, the second a convex glass to give power of distinct vision at a distance. In 1858, Donders announced the general association of asthenopia with hypermetropia and this abnormal structure of the eye. In 1860, he said of the last hundred cases he had examined of asthenopia, hypermetropia existed in every one.

* Medical and Surgical Journal.

According to Donders "the amount of accommodation we can bring to bear on an object at any distance, depends, in a great measure, on the angle at which it is necessary to converge the axes of vision in order to regard the object; the rule being that the two go, to a great extent, hand in hand, and that the greater the convergence the more accommodation we can bring into play. We distinguish between absolute and relative accommodation; absolute being the whole amount of accommodation that exists under the most favorable circumstances, the near-point being taken at the greatest possible convergence of the visual axes, and the far-point at their nearest approach to parallelism; while relative accommodation is the amount that can be made use of at any fixed convergence of the axes of vision. Now it is found by experiment and observation that where normal eyes need, for a given convergence, half their relative accommodation, hypermetropic eyes are obliged to use $\frac{1}{3}$ or even more, which greatly fatigues them; and the cause of the asthenopic symptoms is thus simply a want of proportion between the convergence of the axes of vision and the amount of relative accommodation that is obliged to be brought into play."

TREATMENT.—It was formerly the practice to prohibit the use of positive glasses for the concentration of the vision on distant objects and only those very weak were used for near ones. The relief they afforded was therefore but trifling. Now the nature of the disease being understood, we only regard the effect desired, viz., the relief of the accommodation from its unnatural strain, and the restoring of the proper harmony between it and the convergence of the axes of vision. The treatment, therefore, consists in giving the patient glasses that correspond with the degree of abnormal condition and structure of his eyes. "The strongest convex lens with which he can see distinctly at a distance reduces his eye to one which needs no glass for either near or remote objects." In some patients who possess only a limited power of accommodation, a stronger lens will be needed for work on near objects; "and a simple mathematical process enables us to compute the glass with which he shall be able to work in a given distance, and in so doing bring into play not more than one-third of the whole amount of his accommodation."

In ascertaining the "strongest glass with which the hypermetrop can see in the distance," Donders employs a solution of *atropia*, sufficiently strong to paralyze the accommodation, dropping this into the eye before the trial is made. The patient who first thought himself suited with a glass of twenty-four inches for distant objects; "after the employment of atropia, found one of six inches to be the glass required."

10. FUNGUS HÆMATODES, AND CANCER OF THE EYE.

DIAGNOSIS.—*Fungus Hæmatodes* had always been confounded with *scirrhos* or *cancer* until Burns, Hey, and Abernethy pointed out the characteristics of the two diseases, both in respect to their formation and development, as well as their pathology. They possess several qualities in common, like malignancy, inevitable tendency to the destruction of the affected parts, the power of contaminating the whole system, and giving rise ultimately to fatal constitutional symptoms; but in other respects they are entirely dissimilar.

Fungus hæmatodes is not usually attended with the severe stinging and lancinating pains of cancer; its texture is spongy and elastic, and is soft and apparently fluctuating under the touch, while *scirrhos* is hard and stony. When fully formed the fungous tumor is of the consistence of brain, is of a dark and livid hue, and bleeds on the slightest touch, while the substance of the cancer is hard, fibrous, and cartilaginous; at its commencement and during its development, the fungus is knotty and unequal, and thus affords a sign which distinguishes it from cancerous and other tumors. Fungus is more prone to occur in young subjects, while cancer is for the most part confined to persons past the middle age. Fungus of the eye commences in the posterior chamber, while cancer of the eye attacks primarily the conjunctiva or lachrymal gland. The progress of fungus is more rapid and destructive than that of cancer.

The first symptom observed in fungus hæmatodes is defective vision, and, on looking into the eye, a small shining spot is perceived at the bottom of it. This nucleus of the disease commences in the retina and optic nerve, is traversed by branches of the central artery of the retina, absorbing it in its course, until it arrives near the iris, when it presents a dark amber or greenish hue, and is apt to be mistaken for cataract.

As the enlargement increases, the ball of the eye becomes prominent, irregular, and knotty, the cornea ulcerates, and the disease displays itself externally in the form of a soft, medullary, and purple fungus, bleeding at the least touch. The pupil becomes dilated and immovable in the early part of the disease, and also somewhat changed in color, which becomes a strongly-pronounced amber or brown when the swelling arrives at the iris. The sclerotica soon acquires a dark blue color, is crossed by dilated veins, and is sometimes attacked by the malady as well as the cornea. After the fungus has shown itself externally, the absorbent glands of the jaw and neck become affected with a medullary degeneration; the countenance assumes a sallow and cadaverous appearance; general debility and nervous irritation occur; loss of appetite, impaired digestion; nausea; irritable

stomach; restlessness, and the usual symptoms of hectic fever terminate the patient's existence.

Cancer of the eye, as we have before remarked, generally attacks persons advanced in life. This disease, unlike fungus haematoxilis, commences in the conjunctiva, caruncula lachrymalis, or lachrymal gland, in the form of a hard warty excrescence, which continues for an indefinite period, sometimes attended with twinging and lancinating pains, at other times free from all uneasy feelings, until finally its interior structure becomes altered in texture, an ichorous matter forms within the swelling, which gradually makes its way to the surface, and thus develops the first stage of ulceration. When arrived at this point, vision is destroyed, an irregular fungous mass shoots up from the ulcerated point, highly vascular, of a red, brown, or livid color, and easily excited to hemorrhage. As the mass increases, the tissues of the eye become distended; the ulceration and sloughing advance; severe lancinating pains dart through the globe; the appetite is impaired; the patient loses flesh, strength, and courage; sleep is disturbed; the countenance assumes an anxious, distressed, and sallow appearance; hectic fever sets in, and the sufferer speedily yields to the result.

Hitherto the diseases under consideration have usually been deemed incurable by internal remedies, and on this account surgeons have advised the early extirpation of all suspected tumors, hoping in this way to eradicate the affection while it is local, and before the mass of blood becomes contaminated. But it must be admitted, even when the operation has been resorted to early, and under the most favorable circumstances, that a lamentable want of success has for the most part, followed all surgical measures. Stealthy and insidious at their commencement they gradually glide along, depositing in all surrounding textures their destructive and fatal poison, until disorganization begins, when the livid, foul, and destructive phenomena appear in their hideousness, rapidly communicating their influence through the whole organism, and baffling all efforts of the physician and surgeon.

But though experience has so little of promise, we can not admit that there are no remedies in the whole range of the *materia medica* capable of counteracting this morbid influence. We may yet find some medicine sufficiently specific to cure these diseases during their forming stage. We believe, indeed, that homœopathy will, ere long, accomplish all that we require in this matter. Only a limited number of well-authenticated homœopathic cures of true medullary fungus, or of cancer, have been reported; but the results in these few cases should inspire us with some confidence of success, especially during the early period of the maladies.

CAUSA.—The *immediate* cause of medullary fungus and of cancer is involved in doubt. Some have suggested the operation of *animaleculæ*,

others of a subtle poison, others of a kind of unhealthy inflammation caused by some constitutional defect. Sir Astley Cooper supposed the morbid degeneration always to be "preceded by a disposition in the constitution to its production."

There is unquestionably a *specific morbid action* in the tumor itself, but whether this is owing to some poison which acts *specifically* upon the *particular* part alone, or to some constitutional vice, we are undecided. That there are drugs capable of neutralizing this morbid influence, whether it be constitutional or local, we entertain no doubt. The *exciting* causes are: blows, contusions, obstructions of blood from pressure, and mechanical injuries generally, although the disease often originates without any apparent or traceable cause.

PROGNOSIS.—In our present state of knowledge, the prognosis must be generally unfavorable; but not many years will elapse before this state of things will change, and we shall be able to meet these terrible diseases with sure and efficient remedies.

TREATMENT.—The homœopathic treatment of these affections must be directed by the general principles of treatment of malignant diseases. See *Fungus Haematoëdes* and *Cancer*.—Index.

Belladonna has cured malignant disease of the eye, attended with violent pains in the eyeball; a red shining point in the posterior chamber; pupils dilated and immovable; loss of vision; unusual hardness of the substance of the eye; iris of a dark color, and covered with injected blood-vessels.

Malignant affections of the eye have also been cured by *Conium Carbo-vegetabilis*, *Arsenicum*, *Mercurius*, *Acid-nitr.*, *Calcarea-carbonica*, and *Iodine*.

ADMINISTRATION.—The same as in *amaurosis*.

III. AFFECTIONS OF THE APPENDAGES OF THE EYE.

I. HORDEOLUM. STYE.

DIAGNOSIS.—This is a small boil-like swelling in the edge of the eyelid, resembling in size and general appearance a barley-corn. It generally commences in the follicles of Meibomius, near the angle of the eye; it soon assumes a dark-red or purple color, and becomes painful from the violence of the accompanying inflammation. The inflammation sometimes confines itself to the cellular membrane, and advances very slowly to the suppurative stage, thus causing not only highly troublesome local pains, but a considerable degree of febrile disturbance. In these cases, gangrene and sloughing of the cellular membrane is liable to occur, and either protract the cure, or leave the part in a condition liable to take on a renewed morbid action from the smallest exciting

cause. In other instances, suppuration occurs speedily, the abscess bursts and discharges itself freely, and a prompt cure results.

Causes.—Use of highly spiced, fat, and stimulating food: disordered stomach and bowels; abuse of the eyes in reading, writing, or sewing by gas-light: scrofulous, psoric, and other impurities of the blood.

TREATMENT.—The appropriate remedies are: *Sulphur*, *Pulsatilla*, *Staphysagria*, *Sepia*, *Lycopodium*. We usually employ the third attenuation, and administer a dose twice daily until the swelling and inflammation disappear.

2. ENTROPIUM.—INVERSION OF THE EYELIDS.

DIAGNOSIS.—This affection consists of an unnatural turning inwards of the whole or a portion of the tarsus and eyelashes, in such a manner as to keep up a constant irritation of the globe, and thus generate a troublesome chronic ophthalmia. If the disease is allowed to continue for any length of time, the cornea loses its brilliancy, its vessels become injected and ulcers form; there is continued lachrymation; partial or entire loss of vision; great pain and annoyance from the presence of the offending eyelashes.

Causes.—*Cicatrices* arising from previous ulceration of the tarsi; chronic ophthalmia; relaxation and paralysis of the lids; ulceration of the ciliary glands.

3. ECTROPIUM.—EVERSION OF THE EYELIDS.

DIAGNOSIS.—Eversion of the lids may be caused by a swelling and relaxation of the lining membrane of the eyelid, which presses the edge of the lid forward until it becomes everted, or by a contraction of the skin of the lid, in consequence of the healing of wounds, ulcers, carbuncles, burns, boils, &c. The consequences of eversion are, constant exposure of the globe to external irritating causes: chronic inflammation of the eye: frequent discharge of tears: dryness of the ball; photophobia; nebulous spots and ulcers of the cornea.

Causes.—The principal causes of eversion, in consequence of swelling of the lining membrane of the lid, are, protracted chronic ophthalmia of a scrofulous nature: relaxation from intemperance or old age; a diseased state of the follicles of Meibomius; morbid growths in the part. Other causes of eversion are, cicatrices on the skin arising from incisions, burns, ulcers, small-pox pustules, and carbuncles.

TREATMENT.—The medicines which have been commended in these affections are, *Hepar-sulphur.*, *Mercurius-sol.*, *Calcarea-carb.*, *Digitalis.*, *Borax*.

Should these remedies disappoint our expectations, a portion of the
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lid should be *excised*, in such a manner and in such a situation that the healing cicatrix will restore the displaced tarsi and cilia to their normal position. The operation is simple, unattended with danger, and quite efficient. If opacity or ulceration of the cornea has already commenced when we are first called to the case, it will be advisable to have recourse to the operation without delay, and correct all local or constitutional faults afterwards with suitable medicines.

The attenuations and repetitions of doses the same as in *amaurosis*.

EXOPHTHALMIA.—**PROTRUSION OF THE EYE.**—*Secale-cornutum.*—Prof. Willebrand published his successes with Secale in relieving the partial paralysis of the ciliary muscle, which renders it difficult or impossible to read or sew for any length of time, or to *accommodate* the visual foci to small objects at short distances.

He says the *sphere of action of Secale* is found in the *vaso-motoric-nerves*. The cases in which he has found it most beneficial are: 1. Enlarged spleen from ague, after failure of Quinine. 2. Glalactorrhœa.—3. Indurations, tumefactions and catarrhal affections of the uterus. 4. In blepharitis and pustular conjunctiva of children, preventing relapses.

4. FISTULA LACHRYMALIS.

Under this head authors generally include, obstruction of the puncta lachrymalis and of the lachrymal canals, inflammation and suppuration of the lining membrane of the lachrymal sac, and inflammation, thickening and obstruction of the ductus ad nasum.

In the most simple form of the complaint, there will be merely an obstruction of the puncta, arising from disease of the Meibomian glands, or of the eyelids, and a consequent interruption to the passage of tears to the lachrymal sac. The manifest symptoms in this instance will be, a continual watering of the eye and overflow of tears upon the cheek, weakness of vision, and an undue dryness of the nostril of the affected side.

Another form of the complaint commences in the lachrymal sac, manifesting itself in the form of a small, hard, and circumscribed swelling, apparently within the sac. This swelling is quite tender to the touch, and gradually increases in size until suppuration occurs, when the parts over and around the tumor acquire a red and shining appearance, not unlike erysipelas. During the early period of the inflammation, the puncta are closed, and tears are forced over the cheek. The inflammation also extends down the nasal canal, causing a degree of tenderness, dryness, and obstruction in the duct and nostril. If the suppurative process continues unchecked, the sac, after becoming much distended, bursts, and gives gradual exit to the enclosed pus; thus re-

ducing the swelling and developing a *fistula of the lachrymal sac*. During the suppurative process, the inflammatory action frequently extends to the external textures of the eye, and if the patient be scrofulous or highly irritable, some constitutional disturbance may be present.

If the disease is permitted to increase, or if injudicious surgical interference has seriously injured the affected tissues, we may expect adhesive inflammation between the walls of the membrane of the nasal duct, and permanent obstruction to the passage of tears to the nostril, and also a closure of the lachrymal canals. When this state of things happens, the tears run over the cheek as fast as formed; and we are presented with the disease termed *stillicidium lachrymarum*.

Still another form of the malady consists in a primary inflammation and thickening of the membrane of the *ductus ad nasum*, which gives rise to a partial or total obstruction to the passage of the tears, and their consequent accumulation in the lachrymal sac. This undue lachrymal accumulation induces distention of the part, and after a time, inflammation of its lining membrane, and other consequences which we have before enumerated. This form of fistula is dependent upon some disease of the nostril, like syphilitic, scrofulous, mercurial, and cancerous ulcerations, or inflammation of the nasal membrane from other causes.

When the malady is fully developed, it is difficult to decide in which particular structure the inflammation originated: but our diagnosis will always be facilitated by carefully considering the causes of the affection, and the previous inflammations. In whatever part it commences, the inflammation is certain to extend, sooner or later, to the contiguous structures.

CAUSES.—Scarpa advanced the idea, that all forms of *fistula lachrymalis* were attributable to a disease of the minute glands of Meibomius, or as inflammation of the lining membrane of the eyelid. This idea has been partially refuted by several eminent oculists, but there is, notwithstanding, much truth in the theory. According to our own observations, those forms of fistula which have originated in the puncta, or lachrymal sac, have been preceded by an inflammation of the Meibomian glands, or of the conjunctiva of the eyelids: but where the disease has originated in the *ductus ad nasum*, it may generally be traced to previous inflammation, ulceration, or injury to the mucous membrane of the nostril.

The remote causes which predispose to the affection are: a scrofulous, syphilitic or mercurial taint; general debility and tendency to membranous inflammations: caries of the nasal bones; fractures and other injuries in the region of the lachrymal sac and nasal duct; Chronic ophthalmia; pressure of tumors against the lachrymal sac and the puncta.

PROGNOSIS.—Previous to suppuration of the sac, and if there is only a partial obstruction in the lachrymal canals, we may anticipate a prompt cure by internal remedies. But if the puncta and nasal duct be entirely closed, and the suppurative stage in the sac is far advanced, our prognosis must be unfavorable or reserved. Much, however, must always depend upon the condition of the system, and the causes and complications which influence each particular case.

TREATMENT.—Various methods have been proposed by surgeons for the cure of fistula lachrymalis, but they have proved for the most part unsatisfactory. The different surgical means which have been most commended are, the introduction of a tube or style into the nasal duct; the injection of the sac and nasal canal through the puncta, by means of Anel's syringe, and the introduction of quicksilver. That cures have now and then followed each of these methods, we do not deny: but the numerous instances of permanent aggravation of the malady by their employment, render it probable that there has been altogether more injury than benefit from their introduction into surgical practice. The mode of treatment formerly in vogue of inserting canulæ and styles into the puncta lachrymalia has been, according to Dr. Williams, entirely superseded by the method proposed by Mr. Bowman of London. This plan consists in the enlargement of the punctæ, to admit of the use of a common-sized surgical probe (p. 67.) But this opinion is not generally accepted. Mr. Haynes Walton* says: "The process of Mr. Bowman I find tedious, and so disagreeable, that but few persons will submit to it sufficiently long. My practice in general, therefore is to dilate for a short time only, using in the first instance the smaller probe, and afterwards the larger one, and then to introduce a style.

"When there is really that degree of change in this conduit which imperatively calls for instrumental treatment, the wearing of a style is less irksome, the more beneficial and the quicker plan. In some instances where my patient's time was short, I have introduced the style at once." (p. 346.)

The style recommended is of pure silver and should be kept of different diameters, because it may be advisable to commence with a small one. The figure given by Mr. Walton shows a silver wire about the thirteenth of an inch thick and two inches and a quarter long, having its upper end flattened and bent to a rounded right angle. The flat bent portion is to prevent the instrument from slipping out of sight, and lies outside the lower lid.

Catheterism of the Lachrymal Passages.—La Forest showed how to re-establish the natural lachrymal passages *without any external incision*. To perform it with success the course and relations of the meati of the nose and their boundaries, must be correctly understood. The

* On the Surgical Diseases of the Eye

instrument employed is either a solid or hollow sound, the extremity of which is shaped to resemble somewhat an ordinary button-hook, the curvature of the blade not being so abrupt. The extremity of this sound is carried into the nostril in such a manner that, by a movement of rotation given to the instrument, it will pass beneath the inferior turbinated bone of the nasal fossæ. This being accomplished, the point should be directed in the inferior orifice of the duct, which is effected by giving to the instrument a slight movement backward and forward, then with half a turn, by which the handle is carried inward and downward, it passes through the nasal duct and enters the lachrymal sac. The hollow instruments of Gensoul are preferable for this operation, as through them, if necessary, fluids may be injected.

Such being the difficulties met with by the latest writers among the most distinguished of ophthalmic surgeons, we may regard the duty of homœopathists as the more urgently pressed upon them of testing most fully the powers of their own remedies. It therefore becomes us to investigate all of the causes and accompanying symptoms of each particular case, that we may better select remedies, and thus combat with a prospect of success the *remote* as well as the *immediate* symptoms.

The following medicines have been found curative in the various forms and stages of the complaint: *Calcarea-carb.*, *Acid-nitr.*, *Hepar-sulph.*, *Silicea*, *Aurum*, *Petroleum*, *Belladonna*, *Iodine*, *Digitalis*, *Lacheis*, *Lycopodium*, *Kali-carbonicum*, *Natrum-carbonicum*.

The lower attenuations are always to be preferred, and the dose repeated every twelve or twenty-four hours until the disordered tissues are suitably impressed.

SPASMODIC CONTRACTION OF THE EYELIDS.—*Hyoscyamus*.—According to Wepfer it is capable of *producing spasmodic constriction of the eyelids*; hence Hecker succeeded in curing a case of this kind by accidentally adding some *Hyoscyamus* to a mixture he made up at random.

TRICHIASIS.—*Treatment*.—To eradicate an inverted eye-lash, or bundle of them, plunge the point of a needle or fine knife, dipped in caustic potash allowed to deliquesce, into the dorsal margin, along the course of the hair or hairs, to the depth of an eighth of an inch. On the second or third day, remove the lashes so treated with the forceps; they are all pulled out without any difficulty, and are blackened at the roots. The bulbs of ciliæ are completely destroyed, never to be produced. No inflammation of any moment follows the operation, unless the whole row of ciliæ be removed at a time.*

When a particle of dust or of any insoluble substance gets into the eye it may be removed by washing; but if soluble the water will tend

*Dr. Williams, Braithw. Retros. 205, Part XLIII.

to diffuse it. Putting the eye into a vessel of water and holding it there will often remove the cause of irritation and give relief. If the offensive object be caustic, a strong acid or salt, sweet-oil will mitigate the irritation. But if Spanish flies or dead insects be the cause of the difficulty the oil will do injury. For sharp dusty minerals, paint, or small sharp particles, the white of eggs will often be sufficient; for lime, ashes, dye-stuffs or tobacco, cream or sour milk is the best remedy.

We generally succeed in removing the cause of irritation, whatever it be, by taking hold of the eye-lashes and raising the lid in such a way as to expose its whole under surface to sight. The offending substance is then likely to be brought into sight, and can easily be removed by brushing it off with a corner of a light handkerchief, or a piece of soft blotting paper, rolled into a small soft brush. If wet with saliva it may be pushed far enough back into the eye to fulfil the desired object.

A particle of iron flying into the eye from a blacksmith's anvil adheres closely where it lights. It may be removed by thrusting a bent hair beyond it under the lid and then drawing it forward; if visible it can be removed by the roll of paper, or corner of a linen cloth.

Avoid rubbing the eye, soothe it with milk-warm water; and if the particle is not visible, try to sleep; the substance will generally come out of itself. If the eye be red and inflamed give *Aconite*. In scrofulous persons *Aconite* needs to be followed by *Sulphur* or *Calcarea*. (*Hering*, p. 122.)

Acetum.—Particle of quicklime in the eye. Bathe the eye with diluted vinegar and wash it out.

Traumatic Injuries of the Eye.—Injuries of the crystalline lens from blows, general opacity is observed to follow in a few weeks from the reception of the blow, and in cases of such injury the prognosis given should be guarded. In one instance, says Dr. Williams, the appearance of cloudiness was delayed for eight years—when cataract made its appearance and required an operation for its removal."

The medical treatment of injuries of the eye is simple and will be governed by the principles laid down under *Ophthalmia and Injuries*, p. 689.)

IV. STRUMOUS OR SCROFULOUS OPHTHALMIA.

This disease is characterized by extreme sensitiveness of the affected organs to light. Even the slightest ray causes intense pain and the little patient makes every effort to avoid exposure. During the inflammation an eruption usually makes its appearance on the cheeks, in the vicinity of the eyes, and which often extends to the very organs themselves, thus giving rise to troublesome and dangerous

ulcers. These ulcers not unfrequently extend until the structure of the eye becomes so far impaired, that total blindness ensues.

DIAGNOSIS.—Scrofulous ophthalmia presents several symptoms which are quite characteristic, and by the aid of which we may always form a ready and accurate diagnosis. The disease occurs in subjects of a scrofulous habit, and, in addition to the local symptoms, is accompanied with the general symptoms peculiar to scrofula, of which we will speak elsewhere. (See Scrofula, Index.) Indeed, these general marks will often aid materially in forming our opinion, particularly in slight cases. The light and clear complexion, blonde hair, blue eyes, tendency to glandular swellings of the neck, the tumid upper lip, eruptions during childhood behind the ears and upon the head, sensitiveness to cold, disposition to cough after colds, frequent pains and discharges from the ears, indicate the strumous dyscrasia, which often determine and develop inflammations of the scrofulous kind.

The peculiar symptoms which distinguish scrofulous inflammation of eyes, are, the almost absolute intolerance to light; the violent spasmodic closure of the lids on the slightest exposure of the eyes to it, and the strumous eruptions which generally make their appearance in the neighborhood of the eyes. The light is commonly so painful, and the dread of exposure to it is so great, that it is exceedingly difficult to make a thorough examination in children, and as a general rule it is better to trust the voluntary efforts of the patient, in a moderate light, rather than to resort to much violence in attempting to force open the eyes. Usually, by obtaining the confidence of the patient we can persuade such a display of the globes as will sufficiently satisfy us in regard to the case. The vessels of the conjunctiva are generally much injected; there is a considerable discharge of purulent matter; the balls are stiff and painful; the lids swollen; vision impaired by the inflammation, or by ulcers on the cornea; one or more ulcers form on the conjunctiva covering the cornea; and, if the symptoms continue to increase, the sight is finally destroyed.

The disease varies much in its progress; is sometimes attended with but little redness of the conjunctiva, but slight pains in the globes, and but a moderate secretion of pus; at other times, during the formation of an ulcer, all these symptoms increase in intensity, until the case nearly resembles one of acute purulent ophthalmia. It is of far more common occurrence in children than in adults.

CAUSES.—The constitutional cause, as we have seen, is a strumous dyscrasia. The local, or exciting causes are atmospheric vicissitudes; undue exposure to cold, light, dust, smoke, and irritating vapors; neglect of cleanliness.

PROGNOSIS.—Severe purulent ophthalmia under the most favorable circumstances, for the application of remedies is highly dangerous. The

chief peril against which we have to guard, is ulceration of the cornea. Before this has taken place, and especially if the cornea appears bright, we may entertain hopes of a favorable termination of the case; but if these opaque specks form while the inflammation retains its intensity, we must be prepared for a partial or total loss of vision. Of the different kinds of ophthalmia, the gonorrhœal is unquestionably the most rapid in its progress, and dangerous in its character. Here, nothing but the most consummate judgment and coolness, with constant attention can avert serious consequences. The other varieties of the malady are not quite so rapid and destructive, but they demand the most skillful and energetic efforts to ward off injurious results.

As a general rule, if we are called during early stages of the complaint, and exhibit the appropriate specifics judiciously and boldly, little difficulty will be experienced in inducing a speedy and happy issue to either of the varieties; unfortunately, however, the physician is rarely called until the disease is so far advanced that ulceration can not be prevented. It is evident, then, that the prognosis will depend upon the intensity of the disease, the complication which has occurred, the time it has existed, the constitution of the patient, and the remote and exciting causes.

TREATMENT.—The only local application which can be advantageously used during the acute stage of purulent ophthalmia, is pure water, either cold or tepid. This may be employed as a lotion to the parts, during the course of the acute symptoms, as the judgment of the adviser shall dictate. When the chronic stage has set in, recourse may occasionally be had to stimulating collyria, like the *Vinum-opii*, solutions of *Sulph.-zinc*, *Nitr.-argenti*, *Sulph.-cuprum*, *Acetat.-plumbi*, and *Aconite*; but in regard to these applications, the same rules apply with full force here, that we have presented under the head of simple acute ophthalmia, when alluding to the use of collyria.

The following remedies cover all of the symptoms which obtain in the different varieties of purulent ophthalmia: *Arsenicum*, *Belladonna*, *Sulphur*, *Rhus-toxicodendron*, *Calcarea-carbonica*, *Aconite*, *Mercurius-sol.*, *Graphites*, *Phosphorus*, *Spigelia*, *Digitalis*, *Acid-nitr.*, *Hepar-sulphur*, *Causticum*.

Arsenicum will prove curative in purulent ophthalmia, with much vascular congestion of the conjunctiva; swelling of the lids; nightly agglutination; photophobia; pressure and burning pains in the eyeballs, aggravated by moving the eyes; nebulous spots, and ulcers on the cornea.

Belladona is an admirable remedy in scrofulous inflammation of the eyes, with very great intolerance to light; a constant inclination to remain in the dark, or to plunge the eyes into a pillow or some other soft article; purulent discharge; great swelling of the lids; spasmodic

closure of the lids on exposure to light; chemosis; tearing, throbbing, smarting, or stitching pains in the eyes; roaring in the ears; hot dry skin; thirst; nightly agglutination; throbbing of the carotid and temporal arteries; pains in the temples and head; ulcers on the cornea; dimness of vision. We have cured several cases of purulent ophthalmia of infants, characterized by great intolerance to light, intense inflammation, throbbing of the carotid and temporal arteries, flushed cheeks, hot skin, and other indications of inordinate vascular excitement, with *Belladonna*, succeeded by *Mercurius*. We deem *Belladonna* one of our most valuable medicines in nearly all of the acute inflammations of the eye. The effects arising from the application of a small quantity of the extract to the eyebrows or temples are sufficient to demonstrate its marked specific action upon the structures of the eye. We have found it eminently serviceable in ophthalmia neonatorum, and in acute ophthalmia.

Sulphur is an invaluable remedy in several kinds of purulent ophthalmia. It is adapted to the *chronic* forms, with atonic distention of the conjunctival vessels; swollen and oedematous condition of the lids, with purulent discharge; suppurating ulcers on the cornea; sensation of itching, burning, and heat, in the eyes and lids; troublesome agglutination in the morning; diminished power of motion of the upper lids; pustules of the cornea; sensitiveness to the light of the sun; swollen upper lip; eruptions behind the ears, and on the scalp and face; pressure and burning pain in the eyes; impaired vision.

Sulphur is one of those remedies which will be required more or less frequently in all varieties of ophthalmias, not only to combat those local symptoms which especially correspond with it, but to correct morbid conditions of a more general and latent character. *Sulphur* may occasionally be used with decided advantage in alternation with remedies which appear to cover all of the manifest symptoms, but which do not produce prompt impressions when given singly.

Rhus-tox. is useful in *rheumatic*, *scrofulous*, and *catharral* ophthalmia, with much inflammation and swelling of the lid; redness of the balls of the eyes; profuse secretion of mucus or pus from the eyes and lids; oedematous swelling of the lids and the parts surrounding the eyes; morning agglutination, with increased redness of the eyes; pain on turning the balls; lachrymation; photophobia.

Rhus-toxicodendron.—This is one of the most important remedies in catharral, erysipelatous, scrofulous, and exanthematic ophthalmia. Many allopathic physicians commend the tincture of *Rhus* in scrofulous ophthalmia. We can bear witness to the value of this medicine in scrofulous ophthalmia, and in chronic ophthalmia which is kept up by a discrasia of erysipelatous character.

Caloarea-carbonica has been successfully employed in every varie-

of purulent conjunctival inflammation. Its chief indications are: inflammation, redness, and purulent secretion from the eyeballs; swelling and redness of the eyelids; nightly, and sometimes daily agglutination of the lids; great intolerance to light; nebulous specks and ulcers on the cornea; inclination to keep the eyes in darkness; scrofulous eruptions upon the face and scalp; glandular swellings of the neck; swelling of the upper lips and nostrils; pustules on the cornea; pressing or aching pains in the eyes; corrosive inflammation in the edges of the lids, acrid lachrymation, general appearance indicative of the scrofulous dyscrasia. Dr. Dudgeon expresses the opinion that *Calcarea* "is one of our most important ophthalmic remedies and is surpassed by none in its applicability to the generality of cases of scrofulous inflammation, whether of the eye itself, or its lids; and is indispensable where there is marked scrofulous diathesis indicated by swelling of the glands," &c.

Aconite may often precede other remedies in every variety of purulent ophthalmia, when the inflammation runs high, and gives rise to febrile symptoms. Intense redness and swelling of the affected parts; acute pains; accelerated circulation; violent photophobia; headache; hot and dry skin; thirst; flushed cheeks; throbbing of the arteries about the neck, head and face; loss of appetite, "and perverted vision, point to the employment of *Aconite*." In some instances it may be alternated with *Belladonna* to advantage.

Mercurius-sol. has proved successful in our hands in *gonorrhœal*, *scrofulous*, and *infantile* ophthalmia; the remedy having been preceded by *Aconite*. The symptoms were: violent inflammation and redness of the eyes; great intolerance to light; profuse acrid or purulent secretion from the balls and lids; heat in the eyes; cutting and burning pains in the parts; ulcers on the cornea; cornea dim and misty; sight impaired; frequent agglutination of the lid; gummy and scurfy matter on the edges of the lids.

Graphites is one of the best remedies in *scrofulous* ophthalmia, with excessive intolerance to light; chronic congestion of the conjunctiva; purulent secretion from the balls and lids; frequent agglutination of the lids; ulcers on the cornea; porrigo in the face; eyelids much inflamed, red, and painful; inability to open the eyes before a strong light; constant desire to keep the eyes covered; symptoms worse by day-light than by candle-light; general appearance indicative of a scrofulous diathesis.

Phosphorus is sometimes useful in obstinate and protracted cases of atonic ophthalmia, which have resisted the ordinary remedies. There is generally inflammation and moderate redness of the eyes; considerable secretion of viscid mucus; sensitiveness of the eyes to light; heat, burning and itching of the eyes; lachrymation during the

day; frequent and sudden attacks of blindness during the day; floats before the eyes; weakness and indistinctness of vision.

Spigelia.—Purulent inflammation, principally affecting the eyelids, with sharp pains in the lids; pressure and pains in the eyeballs, during motion; distention and paralysis of the upper lids; painful ulceration of the edges of the lids; dimness of the cornea; general loss of power over the eyes. *Rummel* speaks highly of *Spigelia* in rheumatic and gouty inflammations attacking the cornea.

Digitalis.—Conjunctival ophthalmias arising from colds, with acute inflammation, redness, sharp stitches, photophobia, secretion of purulent matter, and obstruction and dryness of the nose.

Nitric-acid and *Hepar-sulph.* are the best specifics for the removal of *mercurial ophthalmia*, following the abuse of this drug in syphilis and other diseases. The symptoms are: inflammation, swelling and redness of the conjunctiva and lids; secretion of viscid mucus or pus; burning and smarting sensation in the eyes; photophobia, dark and unhealthy ulcers on the cornea; paralysis of the upper eyelids; tears easily excited; nightly agglutination; muscæ volitantes and sparks before the eyes; difficulty and pain in moving the eyes; pains in the bones and soft parts of the forehead and face.

Chininum-sulph. has been employed with success at the first trituration in several cases of strumous and chronic ophthalmias. When the malady assumes an intermittent character it will generally prove promptly curative.

Euphrasia was given by Lobethal with much success in cases of rheumatic, strumous, and catarrhal ophthalmia, where there was "considerable mucous secretion in the inflamed organ; as also in blennorrhœas of the eyes, in all of which cases we employ *Euphrasia* at once, internally and externally; in the former case, one drop of the pure tincture; in the latter as a collyrium, from two to five drops in four ounces of water."

Lycopodium is well adapted to scrofulous or catarrhal ophthalmia, and in obstinate cases of ophthalmia neonatorum. Hahnemann mentions nocturnal agglutination and lachrymation by day, "as prominent indications for the use of *Lycopodium*."

We have employed *Aurum* with excellent effects in several cases of ophthalmia of mercurial and syphilitic origin. Some authors recommend it highly in scrofulous ophthalmia.

Other remedies are, *Causticum*, *Sepia*, *Silicea*, *Staphysagria*, *China*, and *Chamomilla*.

ADMINISTRATION—In acute cases, we prefer the first, second, and third attenuations, and in the *chronic* stage the first attenuation. The remedy should be repeated in the more violent forms of the complaint, every half hour, until we are satisfied with the impression produced;

but in chronic inflammations, a repetition once in twelve or twenty-four hours will suffice. During the treatment we should never neglect the external use of pure water, or milk and water, either cold or tepid.

GENUS IX.—INFLAMMATORY DISEASES OF THE FIBROUS AND MUSCULAR SYSTEM.

1. IRRITABLE INFLAMMATIONS.

In these diseases the blood-vessels are much less affected than the nerves. The patient may feel agonizing pain when no local disease is discoverable.

A lady had an irritable inflammation in the foot. Various remedies were tried without effect. She went to the sea-coast and used a steam bath, after which the pain quickly subsided.

The eyes are very subject to this form of disease. But it is more common in the breasts of young females; the lightest touch pierces to the shoulder, and down the arm to the fingers. It is usually connected with amenorrhœa and may be cured by perfect restoration of the menstrual function. It sometimes attacks the testicles which become exquisitely tender without any visible enlargement. Sir A. Cooper says he had to remove the testicle in three cases. One of these was in a gentleman from South Carolina. After the surgeons of London had exhausted their skill on him, the torturing part was removed, and the patient went home quite well.

When this disease is seated in the bladder the pain often resembles that from stone, and blood is discharged with the urine. The difference is, that the irritable bladder is most painful when distended, and that which contains the stone is most painful when emptied. On dissection the irritable bladder has been found red and resembling velvet. P. 78.

This disease sometimes attacks the rectum. The best remedies are: the high attenuations of *Cantharis*, *Apis*, *Cannabis-sat.*, *Iod.*, *Prenanthus*. These medicines will always palliate, and often cure the most severe cases of this kind.

2. ACUTE RHEUMATISM.

DIAGNOSIS.—Acute rheumatism usually commences after an abrupt suppression of perspiration, in consequence of exposure to wet, cold, or a highly variable temperature. It first manifests itself in the form of slight chills, lassitude, and general uneasiness, which are soon succeeded by swelling, redness, pain, and augmented heat in the part affected. The pains vary much in character, being sometimes aching and gnawing, at others lancinating and darting, or dull and throbbing

or numb, pungent, and prickling, and aggravated by movement, by exposure to drafts of cold air, and by the pressure or touch of the hand. In the first instance, rheumatism seizes upon the fibrous textures, but as the inflammatory action becomes developed, other tissues become involved, the capillaries of the neighboring parts become distended with red blood, and the usual phenomena are present. The larger joints are more subject to rheumatic inflammation than other parts of the body, although it is not uncommon for the inflammation to commence in the head, neck, chest, arms, or legs, and gradually extend into the neighboring joints. The more common accompanying symptoms of acute rheumatism, are: bitter taste in the mouth, coated tongue, rapid and full pulse, moderately hot skin, thirst, scanty, high-colored and sedimentitious urine; intense pain on moving the affected part; anxious and distressed expression of countenance, and occasional perspiration.

Rheumatic inflammations are liable to shift from joint to joint, and sometimes to fix upon important internal organs, like the brain and its membranes, the pulmonary structures, and the heart and its appendages. So long as the malady confines itself to the joints, or to the external parts of the body it is unattended with danger to life; but when metastases occur to important internal organs, the disease becomes in an eminent degree perilous.

Rheumatism consists in a specific inflammation of a constitutional dyscrastic or psoric character, but which varies in its manifestations according to the anatomical structure in which it happens to locate itself. Thus it may be called:—

First.—Muscular Rheumatism, in which the specific inflammation is chiefly seated in the muscular structures;

Second.—Articular Rheumatism, in which the inflammation is chiefly confined to the synovial membranes of the joints or to the ligaments in their immediate vicinity;

Third.—Rheumatic Neuralgia; the force of the disease being chiefly spent upon the nerves and their fine investing membranes.

Rheumatism in either of the above forms may be either *acute*, *subacute*, or *chronic*.

First.—Acute Muscular Rheumatism. The pain from sudden movement of the part is extremely great.

Second.—Acute Articular Rheumatism is one of the most painful and trying of all febrile diseases, and movement of the joints produces intense suffering.

Third.—In Sub-acute Rheumatism there is little febrile action, little redness or tumefaction of the parts; the pain is less intense and agonizing, although the movement of the affected part in certain directions may excite severe pains which may be either lancinating or spasmodic.

CAUSES.—Acute rheumatism occurs for the most part in young, healthy, and robust subjects, and can be generally traced to undue exposure to cold, or to a wet and variable atmosphere. There is, however, in most persons, who are habitually subject to rheumatism, a constitutional dyscrasia, often hereditary. Of the theory of the mode of transmission nothing clearly true has been written. It is argued by Sir Henry Holland,* that the series of actions or changes peculiar to those diseases which occur but once during life, and are sufficient to prevent their recurrence, have their seat in the blood and are carried on everywhere by the circulation; authors who accept this view of the subject have supposed that the "rheumatic, or uric acid diathesis, impressed its peculiar characteristics upon the blood, and that this fluid being contaminated, it became the channel through which the morbid cause must affect the health and well-being of posterity." (Dr. Ludlam.)

There is in some persons a rheumatic condition of the system which is little noticed till it rises to the height of acute disease. It originates in the free use of animal food and fermented liquors. If neglected it often results in violent and destructive inflammation of the organs. The point of attack will be that which is congenitally the weakest or which has become so by long-continued excitement; if the subject of attack be one who has long struggled with difficulties the brain is involved. A number of diseases may be termed rheumatic, as arising from a rheumatic condition of the system; we may therefore have rheumatic bronchitis, rheumatic diarrhoea; rheumatic inflammation following injuries or surgical operations.

Chronic rheumatism differs from the acute form in many respects; as for example, absence of febrile symptoms; the fixed character of the pains; no perceptible swelling or redness in the affected parts; the pains sometimes aggravated, and at other times ameliorated by walking, and other exercises; great sensibility of the diseased tissues to changes of temperature, to humidity, and to cold; dryness and inactivity of the skin; rigidity in the parts, most apparent when attempting to move, or walk, after having been quiet for a considerable period; sedimentitious urine; weakness, trembling, or numbness of the parts.

TREATMENT.—We enumerate, as the principal remedies:—*Rhus*, *Bryonia*, *Aconite*, *Colchicum*, *Belladonna*, *Pulsatilla*, *Dulcamara*, *Mercurius*, *Nux-vomica*, *Phosphorus*, *Calcarea-carbonica*, *Vernum*, *Hepar-sulphur*, *Arnica*, *Colocynth*, *Lycopodium*, *Sulphur*.

Rhus-toxicodendron.—The integuments about the joints swollen and red; pulse frequent and hard; urine dark, or red, and turbid.

Physical Sensations.—Drawing and tearing, or tensive stinging and dragging pains in the affected parts, increased by exposure to cold, by

* "Medical Notes and Reflections," p. 85.

rest, and by movement after having been for some time quiet; rigidity, lameness, and weakness of the muscles in the vicinity of the diseased textures; increase of the febrile symptoms, and of the pains, at night in bed; perspiration, especially during the pains; pains alleviated by exercise; throbbing and burning in the knees, or ankles; painful involuntary contractions of the muscles of the calves of the legs; chronic rheumatic pains occurring early in the morning, and disappearing on moving about. Intellect unimpaired; disposition irritable and impatient.

ADMINISTRATION.—One drop of the first dilution may be given in a dessert spoonful of water, every two or three hours, until the pains begin to subside, or until a medicinal action is produced upon the inflamed tissue.

Bryonia.—Swelling and redness of the inflamed textures: countenance pale or sallow, or flushed and hot; tongue covered with a white or yellow fur; hot and dry surface, or perspiration of an acid character after exercise; considerable thirst, frequent and soft pulse; red or yellowish urine; position such as to relax the muscles bearing upon the diseased parts; pains of a tearing, throbbing, or lancinating character, aggravated by movement, by the touch, by the contact of cold air, and by eating; a relaxed state of the muscles; perfect rest affords almost entire relief from suffering; bitter taste, or dryness of the mouth, with thirst; nausea; bilious vomiting; severe pulsating headache; morbid sensibility of the touch; stitching pains in the region of the liver, and in the intercostal muscles; symptoms worse during the night; general uneasiness, anxiety, and irritability; sleeplessness.

ADMINISTRATION.—The second or third dilution may be employed—a dose every two, three or four hours according to the violence of the disease. For the active febrile symptoms which occasionally accompany the affection, we usually prescribe *Aconite* and *Bryonia* in alternation with satisfactory results.

Colchicum is a valuable remedy in both acute and chronic rheumatism. The pains are lancinating, jerking, tearing, worse at night, and increased by care, anxiety, or movement; or there may be only stiffness and lameness in the joints, when attempting to walk, with oedematous swellings of the parts in the vicinity of the inflammation. Dr. Schroen commends *Colchicum* in those cases which resist the clearly indicated medicines, provided the skin is moist, and the urine turbid. Dr. S. advises it to be given in the form of *vini seminis Colchici* and in doses of twelve drops daily. We have found a single drop of the first dilution, repeated once in from three to six hours according to the acute or chronic nature of the case, very efficacious in several obstinate cases which had resisted the action of other medicines.

It has been observed that *Colchicum* produces the symptoms of tympanitis in goats which feed on this plant in pastures, Dr Meyhoffer

says "in at least fifty cases of tympanitis in cattle, sheep and goats, I gave the strong tincture of Colchicum, two or three drops at a dose, and always with success. The dilutions disappointed me."

Belladonna will prove an excellent remedy, in rheumatic attacks accompanied with a high degree of nervous irritability, and a morbid activity of the cerebral organs. The pains are very severe, especially at night, increased by touch, or by remaining too long in one position.

Pulsatilla is indicated when the pains shift rapidly from one part to another, and are unattended with any great swelling or redness of the integuments; also, in chronic rheumatism characterized by weakness, rigidity, coldness, and sensation of weight in the disordered structures.

Dulcamara often proves speedily curative in rheumatic inflammations which have been caused by exposure to cold and dampness. The affected parts usually feel as if bruised or beaten, and after remaining for some time in one position are attacked with severe pains which do not subside until the patient moves about. The pains are most common in the back, and in the joints of the arms and legs.

In cases of frequently-recurring rheumatism, of serofulous or psoric subjects, we must use one or more of the following medicines: *Calcarea-carbonica*, *Sulphur*, *Lycopodium*, *Mercurius*.

When the disease has become chronic and inveterate, and abnormal depositions occur about the joints, with thickening of the membranous tissues, and permanent rigidity, weakness, and tenderness on motion a persevering employment of *Rhus*, or *Hepar-sulphur*, or *Nux*, or *Phosphorus*, or *Veratrum*, or *Lachesis* will induce curative results of the most satisfactory character.

Other medicines which have occasionally proved successful in rheumatic affections, are: *Coccygineum*, *Iodine*, *Ferrum*, *China*, *Arsenicum*, *Arnica*, *Carbo-vegetabilis*, and *Hyoscyamus*.

ADMINISTRATION.—In the acute form of the malady, we employ from the third to the sixth attenuations, and repeat the doses every two hours until a medicinal impression is evident. In chronic rheumatism, we prefer the first attenuation and prescribe a dose once or twice daily.

Actea-racemosa in *Acute Rheumatism*.—Dr. F. R. McDonald, of Edinburg, has made some rapid and surprising cures with this remedy. He gives twenty-five to forty drops of the tincture three times a day. Dr. Hale says: "Our provings show it to be homœopathic to many forms of rheumatism, chiefly muscular. It affects in preference the muscles of the back, neck, chest and uterus. The first dilution, or two or three drops of the tincture repeated every hour or two, has in my hands acted magically in acute rheumatism of the parts above named."

Dr. E. A. Guilbert says he has found that cases treated by topical use of remedies recover much more rapidly and are less liable to relapses than others treated by internal remedies only. *Actea-racemosa*,

Acon., *Rhus-rad.*, *Rhus-tox.*, *Bell.* have been tried, of these *Actea* is the most powerful. Two teaspoonsful of the tincture may be added to a pint of soft water, and used warm or cold, as the patient's feelings may direct; after using the selected remedy for twelve hours, it is better to change for another.

Propylamine.—Dr. Awenarius, of St. Petersburg, says he used this remedy in 250 cases of rheumatism, and in every case the pain and fever disappeared the day after its administration. *Propylamine* is prepared by distillation from herring-brine. The dose was twenty drops, every two hours.

Tartar-emetic.—Rheumatic pain, burning and obstinate, in the back, left shoulder blade on turning the neck; in sacro-lumbar region before rising from bed: Weakness of cervical muscles that she can not hold her head up. (*Hahnemann*.) Pain in the shoulder; trembling of the hands; cold hands; icy coldness of the fingers; jerking of the muscles of the arms and hands; eruption of pimples in the forearm resembling itch; disappearing on scratching; flea-bites on the hand; ends of the fingers feel dead, dry, hard, without feeling for many days; dark-colored spots on the fingers: rheumatism connected with porrigo or other eruptive diseases, particularly such as have been repelled. Itching postular eruptions in the arms and hands: Tartar-emetic sometimes requires to be preceded by Sulphur-hepar, or other antipsorics.

LOWER EXTREMITIES.—Heaviness in the loins; rheumatic pain in the lower region of the knee; cold feet; very painful cramps in the calves of the legs in the afternoon, which disappear on walking. The thighs spasmodically contracted towards the bowels, weakness of the legs; coldness of the extremities; cases in which the patients have been reduced by protracted, watery diarrhoeas: extremities become cold and powerless; frequent cramps in the calves of the legs. The third attenuation of this remedy is perfectly homopathic to this condition.

Review of Allopathic Treatment.

The different modes of treatment in use in some of the various schools are:

1. *Bleeding*.—The temporary palliation of symptoms from bleeding is always followed by chronic rheumatism of long duration; extreme anæmia from which the patient scarcely ever recovers.

2. *Moderate Bleeding and Diaphoretics*.—The relief is but slight and transient, but the evil is decided. The tendency of the disease is to impoverish the blood of red globules, increasing the tendency to chronic rheumatism, prolonging convalescence, increasing the danger of internal inflammations; of internal effusions into the pericardium and pleura, and to the synovial sacs of the joints, Dr. Todd (in his Cli-

nical Lectures p. 28,) says, this treatment "also produces troublesome cases of delirium which do not occur under other treatment; it also predisposes to carditis and endo-carditis; and these affections, arising in a case in which bleeding has been practiced, are much less manageable than in others who have not been bled.

3. *Calomel and Opium to the extent of Ptyalism.*—This is the *alterant* system of treatment; exciting one disease to cure another, and the new disease worse than the old. Dr. Todd thus describes the patient after being thus "cured": he has "loose teeth, ulcerated gums and all the painful and offensive accompaniments of ptyalism; as bad or worse than the original disease. And then it does not in the least guard the patient against the accidents of internal inflammation, pericarditis, endo-carditis, pneumonia, pleuritis, peritonitis." He has often seen these come on patients who were already salivated. The effects of Mercury are so various on different persons that the result can not be foreseen: and it offers no assurance of speedy cure or speedy convalescence.

4. *Colchicum.*—Is a chief reliance in the schools for both gout and rheumatism. Dr. Todd says, in rheumatism he found it of no use.

5. *Treatment by Opium.*—This is lately revived. It is claimed that Opium soothes the pain, calms the nervous system, promotes dia-phoresis, does not diminish the eliminating action of the kidneys, and that the disease causes remarkable tolerance of the remedy.

Lime Juice.—Dr. Inman, of the Liverpool Northern Hospital, proposes this remedy in inflammatory rheumatism. His conclusions from large experience are:

1. That the worst rheumatic cases are those in which perspiration is most profuse.
2. In such he has only seen lime juice fail in one case.
3. Great improvement follows diminution of perspiration, which is not an eliminative effort of nature to be encouraged.
4. That in rheumatism the blood is as poor in globules as it is in consumption or Bright's disease or anaemia. The worst cases inherit a constitutional dyscrasia.

ARTHRITIS.—GOUT.

Although rheumatism and gout are described by authors as different diseases, it is altogether probable that the nature of the inflammatory action is the same in both instances. When this peculiar inflammation seizes upon the young and robust, and pervades the larger joints and the muscular structures, it receives the name of rheumatism; but when individuals advanced in life, are the subjects of attack, and it appears in the small joints, it is recognised as gout.

A fit of the gout is almost always preceded by some gastric or intestinal derangement, like impaired appetite, furred tongue, bitter taste, acid or bitter eructations, flatulent distention of the stomach and intestines, and occasionally diarrhoea. The inflammation is, for the most part, situated in the ball of the great toe, but it may attack any of the smaller joints, and as the disease advances, the veins in the vicinity of the pain become distended; the integuments swollen, oedematous, and of a bright scarlet color; the pains become severe, of a darting throbbing, or a persistent aching and burning character, increased by contact or by movement; there is an almost entire loss of muscular power of the affected parts; the pains are worse during the night, and accompanied during this period by active febrile symptoms; nearly all the functions of the organism are sympathetically deranged; the urine is small in quantity, high colored, and becomes turbid on standing: the patient is restless, irritable, and morbidly sensitive to moral and physical impressions. The disorder usually arrives at its maximum of intensity, in two or three days from the commencement of the inflammation. At this period, the whole toe, and sometimes the foot itself, becomes oedematous, and numbness and prickling are frequently experienced in the swollen textures, especially during the day; the pains and the nightly febrile exacerbations now commence subsiding, until at the end of from seven to ten days the active inflammatory symptoms have disappeared and left the patient with a debilitated and oedematous limb.

When the paroxysms of acute gout occur very frequently, they serve, after a time to impair the constitution, and to cause permanent thickenings of the articular membranes, or cretaceous deposits about the joints, and to induce that condition of the parts which leads to chronic gout. This form of the complaint is characterized by dull, burning, or tensive pains, oedema, thickening of the membranes of the affected joint, with rigidity, weakness, and partial loss of muscular power; more or less gastric derangement, augmented sensibility of the mind and body to external impressions, depression of spirits, and general restlessness and irritability.

Causes.—Gout is generally supposed to be hereditary, although cases are constantly occurring in which no natural predisposition can be traced. There is no doubt, however, that in the majority of instances, a hereditary predisposition exists. The exciting causes of gout, are: high-living, want of sufficient exercise, abuse of stimulants, especially wines, and general irritability of the nervous system, from loss of rest and irregularity in eating.

Dr. Wolf says:—Gout in its worst and most intractable form, is the consequence of the sycotic dyscrasia. Tuberculosis, which has spread fearfully in this century, has also a relation to sycosis. Tubercles on the placenta are only found in the cases in which the parents are sy-

cotic or tuberculous. Tuberculosis and warts have a near relation, as is proved by the tuberculous matter producing warts by inoculation.

"Goitre and nodosities in the breasts also depend on sycotic dyscrasia and are to be antidoted as early as possible by one dose of *Thuja*. Goitre is in most cases a kind of critical deposition, of which tuberculosis becomes latent; but, if interfered with by the common remedies, tuberculosis of the lungs is often the consequence. The same holds good of the nodosities of the breast; their operation favors cancerous destruction." A timely dose of *Thuja* is the remedy proposed to prevent these evils.

"Health and long life," says Sir Wm. Temple, "are usually blessings of the poor, not of the rich; and the fruits of temperance, rather than of luxury and excess. And, indeed, if a rich man does, not in many things, live like a poor one, he will certainly be the worse for his riches; if he does not use exercise, which is the only voluntary labor; if he does not restrain appetite by choice, as the other does by necessity; if he does not practice sometimes, even abstinence and fasting, which is the last extreme of want and poverty; if his cares and his troubles increase with his riches, or his passions with his pleasures, he will certainly impair his health, whilst he improves his fortunes, and lose more than he gains by the bargain; since health is the best of all human possessions, and without which the rest are not relished or kindly enjoyed."—(Sir Wm. Temple's "*Works*," Lond., 1770, Vol. III., p. 278.)

PATHOLOGY.—Concerning the nature of the calcareous degeneration in the arteries of gouty subjects, Dr. Garrod says ("On the Nature and Treatment of Gout," London, 1859, p. 246):—

"I have carefully examined those found on the valves of the heart, and the atheroma from the aorta of several gouty patients, having extensive chalk-stones, but have always failed to discover the least trace of uric acid; but the tabular crystals of cholesterine were often present in such matter." He remarks (page 510): "To consider the calcareous deposits as a proof of gouty inflammation, is altogether an error; for I have shown that in gouty subjects, with concretions of urate of soda in nearly all the joints, the deposits from the aorta were of a different character, consisting either of phosphate or carbonate of lime, or of cholesterine and fatty matter."

Calcareous degeneration of the arteries has long ago been observed. Mr. H. Watson ("*Medical Commentaries*," Vol. I., 1782) found, in the body of extremely gouty subjects the thoracic aorta healthy; but this vessel in the abdomen was ossified from the diaphragm to the iliacs. Morgagni (Vol. II., p. 619) gives the case of Cardinal Cornelli, who died in his sixty-fourth year from metastasis of gout to the heart. He was exceedingly corpulent. After death, the gall-bladder was found to contain a calculus; the right kidney contained eleven calculi, most of them of considerable magnitude. The cartilages of the trachea were

hard; the aorta was somewhat dilated in the thorax, and in its course through the thorax and abdomen some ossification had taken place. Dr. Saunders (*Edinb. Med. and Surg. Journ.*, Vol. XXX, p. 187) describes the case of a baronet, who died in his sixty-fifth year, and who had been "the subject of severe paroxysms of gout and politics for many years." The coronary arteries of the heart were completely ossified, and the inner surface of the aorta also exhibited ossific formations in different stages. Dr. Cheyne says of one gouty subject, aged sixty years, that "the aorta was studded with steatomatous and earthy concretions." The post-mortem examination of George IV., King of England, whose habits of life, frequent attacks of gout, and great corpulence, during the latter years of his reign, were matters of notoriety, revealed the effects of gout on an extensive scale. It was found that the "three semilunar valves at the beginning of the aorta were ossified throughout their substance, and the inner coat of that blood-vessel presented an irregular surface and was in many parts ossified." Signed: Henry Halford, Matthew John Tierney, Astley Paston Cooper, B. C. Brodie.—("The Times," Friday, July 2d, 1830.)

Dr. Garrod discovered urea in the blood in 1847. Since that time the following general results of chemical discovery have been reached:

First.—The quantity of urea or uric acid contained in the blood in health is so small that it is hardly possible to discover it.

Second.—In gout the blood contains it in considerable quantities in the state of urate of soda. It can be separated from the blood in acicular needles or rhombic crystals of uric acid.

Third.—In acute rheumatism the blood contains no more uric acid than in health.

Fourth.—In a person under gout the serum of an ordinary blister yields uric acid, except when the part to which the blister is applied is affected with a gouty inflammation.

Fifth.—Perspiration seldom contains uric acid secreted from the blood in gout, instead of being greater, is less than usual. In the regular stage of acute gout, the return is scanty and the uric acid measured by the twenty-four hours' secretion is also diminished. That this acid is thrown out in much larger quantities as the disease is passing off, and it then may amount to even far above the patient's daily average.

In chronic stages of gout the excretion of uric acid becomes much faster decreased, the urea remaining but little affected; the deposits of urates are now more rarely seen, and the urine frequently contains a little albumen. Even in the intervals between the attacks, it is noticed that a deficient elimination of uric acid may point out that the kidneys have undergone some structural change.

The chief fact arrived at by these late researches, is this: that in

every instance gouty inflammation is accompanied by a deposition of urate of soda in a crystalline form; and this is considered a pathognomonic phenomenon, seeing that it is not found after rheumatic nor any other inflammation. Numerous examinations have been made of subjects who had had gout in every degree, from the most severe and inveterate form to those who had only suffered in a single joint; and this particular condition was present in them all.

TREATMENT.—*Diet.*—This should be very light, chiefly amylaceous; diluents should be freely used; alcoholic stimulants should be avoided except under peculiar circumstances.

Dr. Garrod recommends *simple alkaline* medicines in alternation with small doses of Colchicum.

Sesqui-carbonate of Ammonia.—When the vital powers are at a low ebb, and there exist great vascular and nervous depression. At the same time omit the Colchicum or use it in small doses. (*Braithwa. Retrosq.*, No. 41, p. 36.)

Local Applications.—Covering the part with cotton batting over which is spread oiled silk to protect the joint.

Employ all the agents capable of promoting the excretions, especially the kidneys and skin; restore the digestive organs to a healthy state, they being in all cases deranged.

Carbonate of Lithia.—Lithia possesses the remarkable property of possessing the most soluble salt of uric acid that is known. And, seeing that the insolubility of the acid and many of its salts leads to the formation of gravel and calculus, and probably to the deposition in gout the salts of this alkali offer a most promising remedy. Dr. Garrod says he has used them to considerable extent. (*Lancet*, 1859, p. 645.)

The principal remedies for acute gout, are: *Bryonia, Nux-vomica, Colchicum, Bell., Aconite, Rhus, Pulsatilla, Actea-spicata, Actea-racemosa, Guiacum, Arnica, Arsenicum, China, Ledum, Sabina, Cantharides.* For chronic gout, the best remedies are: *Calcarea-carbonica, Sulphur, Phosphoric-acid, Aurum-muriate, Iodine, Hepar-sulphur, Phosphorus, Mercurius, Sepia, Silicea.*

It will very commonly happen that several of these medicines will cover most of the manifest symptoms which are usually present in gout, but in making our selection, the strictest regard should be had to all the remote and exciting causes which may have exercised an influence in originating the malady, in order that we may strike deeply at the foundation of the disturbance, as well as at the more immediate and visible phenomena.

In prescribing for gout, we may be governed by the general indications for the different medicines, as pointed out in the last section.

Sabina.—Red shining swelling, accompanied by haemorrhage of a

bright red color. Dr. Hendricks, of Germany, said, he cured a case of this kind by means of two doses of Sabina. Bonninghausen says, he found Sabina the most efficient remedy in gout. And, since it produces condylomata, it may be suspected that this malady so much dreaded by our fathers may have a sycotic anamnesis.

Colchicum is an irritant cathartic, emetic, and diuretic; it has some sedative action on the circulation, and has been long regarded as the specific for gout and rheumatism. Effects of large doses: it is an energetic, acrid, narcotic poison, producing severe vomiting, urgent diarrhoea; dryness and burning of the throat, excessive colic and heat in the abdomen, great depression of the circulation and sometimes suppression of urine. In some cases death results from exhaustion following inflammation of the bowels; death sometimes preceded by headache, delirium, stupor and insensibility, showing its action on the nervous system. All of these symptoms have been caused by two drachms. It was introduced into general practice by Sir Everard Home as a remedy for gout. It acts specifically in small doses, increasing the excretion of urea, even when it does not increase the urine; it is observed to produce all its best effects when it operates without purging.

Given in the large doses usually thought necessary for gout it often removes the local symptoms of pain and inflammation; but it has a tendency to "leave the disease much stronger in the system, and leads to still more calamitous, because still more constant pains of the chronic form of the disease." (*Seudamore, On Gout*, p. 108.) We have often seen its action prompt, and, at least temporarily, beneficial. When given in doses short of such as excite purging in acute cases, it apparently moderates the local inflammation and arterial excitement, makes the pulse smaller, softer and less frequent; mitigating considerably the severity of the pain. Mr. Haden, in a work on *Colchicum* (1820) says, it "controlled the action of the heart and arteries, curing those states of the constitution called diseases of excitement."

Sir H. Halford, in a communication to the Royal Society, says from his long experience, there is no disease for which he prescribed with so much confidence as gout. He found the disease common in every part of the body, the eye, the kidneys, urethra, prostate gland, tonsils; it may appear as angina tonsillaris. An eminent physician tried long to cure one such case, and at last plunged a lancet into the tonsil. Only a little blood flowed; but in a few minutes the disease seized violently on the ball of the great toe, and the angina was forgotten.

Colchicum was his exclusive remedy. The celebrated *Eau Medicinale*, a secret remedy for gout was composed of it.

Rhus-tox.—Gout or rheumatism occurring in the spring season symptoms aggravated by external heat, and generally by rest, and manifested by evening and night. See p. 158.

4. ARTHRITIC DYSPEPSIA.—DYSPEPTIC GOUT.

CAUSES.—Gout in its irregular forms usually occurs in persons of constitutions naturally feeble, or those weakened by debauchery and excess, or worn out by the cares, fatigues, and accidents of life. It has commonly been supposed that the gouty diathesis depends upon a morbid matter which was in some way eliminated from the system. But this theory, though easily constructed, has furnished little practical proof of its correctness. More recently it has been held to have its origin in dyspepsia; but the best writers have shown that, although symptoms of disturbed digestion are frequent, if not invariable attendants upon gout, they are themselves originated by the same remote cause on which is based the gouty diathesis with all its attendant manifestations of disordered health.

Dr. Gairdner (*On Gout, its Causes and Cure*, London, 1849, pp. 232), says: "One of the most remarkable results of arthritic indigestion is the presence of acid in nearly all the excretions of the body. This has of late been called the uric acid diathesis." But the term diathesis should be applied to denote a condition of the constitution, "not a simple affection of certain fluids of the body."

Though this acid condition is very general; since Dr. Garrod has proved the existence of uric acid in the blood, and Wollaston found it in the joints; Landerer discovered it between the coats of the aorta, and others have shown that it constitutes a part of various fluids of the body in a state of disease; but we still object to the term expressed in "uric acid diathesis," for various other acids have also been found in the secretions. Berthollet thought that the acid of the sweat was the phosphoric, Berzelius and Anselmino showed it to be lactic. Thenard found it acetic; and in cases of dyspepsia we have, no doubt, the hydrochloric, the lactic and the acetic in the stomach. Again, we have *urates* in the urine, not only in gout, but from indigestion, ephemeral fever, and other diseases. Dr. Prout says "the lithate of ammonia in the urine is one of the most common attendants of slight dyspepsia from errors of diet." In the course of severe, general diseases, the same substance appears in the urine in a less transient form; "when no food has been taken into the stomach, and when therefore its formation can only be attributed to secondary mal-assimilation of the albuminous contents of the blood and albuminous tissues." Gairdner says, there are also durable deposits of urate of ammonia without much constitutional disturbance, where there was no disintegration of the tissues, and no probable interruption of ordinary wholesome nutrition. He also says that he has often seen cases of true regular gout, in which there was no evidence of excess of urates in the urine;

he therefore believes "that the expulsion of urates from the system through the urine, and of other acid and earthy matters through this and others excretions, is to be looked upon only as one of the many consequences or symptoms of gout." It can not then be doubted, that uric acid, as well as urea, is a constant and necessary ingredient of pure and healthy blood; that though derived from the food, they are not imbibed with it, but are formed within the body, and enter the blood in the earlier stages of assimilation. It is not known that they serve any useful purpose, and they are probably refuse or effete matters, which, if not duly eliminated from the blood by the kidneys, are productive of much disturbance to health. The disappearance of these substances in the urine and their accumulation in the blood are merely frequent symptoms and consequences of gout, which is itself, again, the cause of other important phenomena. Among these are:—

The general cachectic condition seen in gout, causing distressing headaches, somnolence, and indifference; the various shades of dyspepsia, with which the gouty are afflicted; and sometimes sudden translations of diseased action to vital organs, as the heart or stomach, causing such violence as to result in sudden death.

It was the opinion of Liebig and Wöhler that uric acid was the parent of the urea; but Dr. Gairdner was convinced by long-continued observations that the explanation of many morbid phenomena will be found in the altered relation of the urea and the uric acid to each other; and that in certain morbid states of the system, the nascent urea becomes uric acid during the assimilation of the food; and in proportion as the amount of uric acid in the urine is increased, that of the urea is diminished. Dr. Gairdner therefore believes that in a state of health, the elements necessary for the composition of urea are separated from the blood; but that, under the influence of the gouty diathesis, the secretion of uric acid takes place in greater abundance.

The chemical composition of uric acid is such that to convert urea into it the chief change required is the addition of carbon. We may now suppose, says Dr. Gairdner, that uric acid and urea are formed during the process of respiration, and circumstances in the condition of the patient may cause the one or the other to preponderate. In the history of gout we find many symptoms which show that decarbonization of the blood is deficient: thus we have "the blue lips, the swollen veins, the bloated complexion, the skin diseases, and general cachectic condition." "When the blood is perfectly oxygenated, the heart and vessels are roused to energetic contraction;" but when the expiration of carbonic acid has been incomplete, the absorption of oxygen diminished, and a portion of venous blood carried forward into the arterial system, the circulation is slackened, a depressing influence is exercised on the brain and nervous system, congestion takes place in the vessels, and

the condition already pointed out as favorable to the creation of a gouty diathesis is speedily brought about.

This state of things is promoted by all circumstances which diminish the exhalation of Carbonic-acid from the lungs, as repose of body, sleep, confined air, intense and long-continued mental employment, anxiety and depression of mind. In one case given by Dr. Gairdner in which thirty-six ounces of urine were passed in twenty-four hours, four parts of urea in one thousand of urine had disappeared, thus "sixty-eight grains of urea were suppressed in the urine, to reappear in the system in some noxious form or other." And to this change in the secretions of the body, the suppression of a healthy evacuation, and its reappearance in a more noxious form, and the retention in the blood of a poisonous ingredient is attributed the formation of the urates and all their injurious effects. The correctness of this theory is confirmed by comparing the quantity of urine secreted during sleep with that passed in the day; the condition of urine in an asthmatic patient breathing with difficulty; that passed by males and females; and that passed by individuals living on different kinds of food.

EXCITING CAUSES.—Gout being a disease of the sedentary, the supine, the luxurious liver, and frequently of the student and over-taxed man of business, all its exciting causes are such as increase the mass of the circulating fluids, while they impede the full arterialization of the blood, and cause its accumulation in the venous system. Chronic diseases are mere modes of decay of the system. This is true whether they depend on original defect, errors and habits of life, or of declining age; but no disease more remarkably exemplifies the progress of decay than gout. Originating often in the luxurious indolence of a sensual ancestry, its characteristic symptoms are chiefly exhibited in the decline of life; but it lies concealed in the constitution of the young. The diseases of children and growing youths often give indications of the presence of arthritic disease; through succeeding years its progress is gradual but steady and certain, if its great causes be permitted to continue their operation.

PATHOLOGY.—Since the days of Dr. Brown, the pupil of Cullen, gout has been regarded by many as an *asthenic* or non-inflammatory disease. That inflammation is not *essential* to gout is rendered probable by its rapid occurrence and dispersion in different localities; the languid circulation of gouty persons; the rare occurrence of the disease at that period of life when inflammation most commonly occurs, and also in robust individuals. Its appropriate subjects, according to Dr. Gairdner, are: "The heavy and corpulent, those who have loaded viscera and languid circulation; persons of inactive temperaments and lazy habits; those in whom other diseases assume indolent and cachectic forms." "It shuns the stout and healthy laborer; it siezes the fat and dull farmer.

It seldom visits the active and athletic sportsman; it revels in the blood and joints of the exhausted debauchee." "Were gout essentially inflammatory, it might be presumed that inflammation would be its primordial local symptom, and in this case we should surely expect that it would sometimes run the ordinary course of phlegmonous disease. Not only is this not the case, but there is something in the nature of the disease which prevents the inflammation that supervenes in gout ever running into the suppurative process. I never saw but one instance of phlegmon in gout, and I never saw a more ill-conditioned and offensive discharge." "The terminations of gout, and its vicarious and cognate diseases also mark its nature. They are suppression of the natural evacuations, spasm, cramp, dispepsia, melancholy, apoplexy, and dropsy." (*Gairdner on Gout.*)

The first condition essential to the formation of the gouty diathesis seems to consist in *venous congestion*. The capillary and nutrient vessels, distributed on the extreme and sentient fibrillæ of the nerves, being in the same distended condition as the larger venous trunks, and being bound down by the firm fasciæ in which the gout has its usual seat, caused by their pressure upon the nerves, the painful phenomena that attend the disease. The contents of the over-distended vessels being compressed between the power derived from the heart and arterial system, urging it forward on its course, and the antagonistic resistance of the great veins leading to the right auricle, cause occasionally, the capillaries to give way, causing a true haemorrhage in the part affected. If the rupture takes place in a minute capillary, carrying the serous portion of the blood only, oedema is the consequence, but if the burst vessel be one carrying red blood, a true ecchymosis is formed. (*Gairdner, Amer. Jour. Med. Sci.*, Oct. 1849. p. 427.)

The essential pathology of gout appears then to consist in an increased pressure of the blood from its accumulation in the great veins and an altered state of that fluid leading to the formation of *uric acid* instead of *urea*; these results depending on too copious an assimilation of nutriment, on defective respiration, and on a deficiency of the evacuation from the liver, kidneys and skin. The plethoric state thus created causes in strong constitutions the painful manifestations of regular atonic forms of the same disease. The mystery of hereditary influence in developing gout through those causes of disease which in better constitutions would only have produced a phlegmonic inflammation may not yet be clearly understood. But it is unquestionable that this disease, though revealing itself by the outward manifestations called gout, is indeed due to a particular tendency of the constitution of which no explanation has yet been given.

TREATMENT.—*Prophylactic.*—This is chiefly hygienic. As the incipient signs of gout are visible in infancy, in those families in which

gout is a more certain inheritance than the patrimonial estate, it is important to commence from birth a rational course of eclectic and hygienic treatment that may extinguish or prevent the development of the concealed "family curse".

The diet of children who are known to be heirs of this "heritage of woe," should be regulated with great care. They should always be allowed the temperate use of a wholesome, nourishing diet; should abstain from heating drinks, take active exercise in the open air, particularly the free pure air of the country; cheerfulness of mind and the avoiding of every sensual excess from puberty upwards; and the cheerful labors and active exercise and excitement of a country farm life, are among the principal means of preventing the occurrence of gout.

In a form of gout in old persons manifested by swollen articulations of the hands, with slight derangement of the stomach, faltering in the action of the heart, and intermissions of the pulse, iron is the best and perhaps the only remedy. The Saccharine-carbonate (*Edinb. Pharmacop.*), citrate and tartrate are the best forms.

Cold Water.—This is always dangerous when applied externally, especially when it has any chilling effect.

Colchicum.—This has the reputation of a specific; and not without some foundation, since it is known to cause the more free expulsion of urea from the system. It is found that the increase of *urea* is accompanied by diminution of *urates* in the urine. The action of Colchicum is supposed to be through the nervous system.

Colchicum is most beneficial in cases of regular gout without injury of the organs. Cases of atonic gout are less relieved by it; and in them it often produces low and depressed feelings.

It is most useful after the disease has expended its first violence, when the fever has abated, the œdematosus swelling of the part is established, and the bowels relieved.

Persons who have gone through a regular fit of gout should seek to pass a holiday of perfect rest in the pure bracing air of the country, with as much exercise as their feeble state will enable them to take. The lungs should be thoroughly expanded, the assimilation of food should be perfected, and a pure, well oxygenated blood should be worked into the organic textures and moving structures of the body by active exercise in a high and healthy region, at some fashionable watering place, on the sea coast or the springs.

Irregular Forms of Gout.—In sudden and alarming attacks which sometimes arise from metastasis of gout from distant points to more important organs it is difficult often to decide upon a prompt, successful, and safe mode of treatment. Opium and powerful stimulants are often too freely used when they are unnecessary; and very frequently the most painful and alarming symptoms excited by some mental emotion,

disturbance of the circulation, or more commonly, indigestion, subside on their causes being removed. To discriminate between these cases, and those in which prompt measures of the heroic character are necessary, requires the highest degree of judgment. But in any event the physician best merits the confidence of the people who is never without resources, which are both palliative and safe; and who never suffers himself to be hurried into a decision by the clamor of patients or their friends. If there be little change in the pulse, though there be intense suffering and vomiting, the case admits of some delay and deliberate action; whereas, those in which the action of the heart is greatly depressed, and where there is little acute pain, are the cases that call most imperatively for prompt and effectual aid.

Metastasis to the Heart.—The patients in whom this frequently takes place are seldom free from structural disease of that organ; there are earthy formations disturbing the action of the valves and injuring the functions of the coronary arteries, by which the nutrition of the heart is impeded; or a fatty degeneration of the muscular substance, leading to dilatation of the cavities.

TREATMENT.—The first of these is incurable, though the homœopathic remedies we shall propose for it may be tried.

The fatty degeneration, it is believed, may be removed by putting an end to the secretion of oil globules within the fibres of the muscular structure of the heart, and by restoring that of fibrin.

For this purpose a diet composed of little hydrocarbonaceous matter, and furnishing the albuminous elements of the blood, that is a more animal diet with pure air, and well-regulated exercise are recommended. Neither Colchicum, purgatives, nor laxatives are suitable to such cases; but the use of tonics, continued for months, has been often successful. Gallic acid has been used with great benefit.

Metastasis of Gout to the Head.—“It occurs with every degree of suffering; the headaches from which those persons suffer in whom the excretions of urates and urea have, from any cause, been suddenly diminished or temporarily arrested, are only a commencement of this affection, which may well be likened to the effect of a poison. I believe that the substance of the brain itself is the part usually affected in these cases; and my reasons are that they are never attended with delirium or wandering, but always accompanied by stupor and somnolency; and that when they terminate in apoplexy, the ruptured vessel is found in the cerebral substance.” (*Gairdner.*)

TREATMENT.—Colchicum in minute doses is useful by increasing the urea carried off in the urine. Mild purgatives may be useful when given with caution. See Remedies, p. 166.

Belladonna is probably the most potent remedy in this form of me-

tastatic gout. When there are decided febrile symptoms present, it should be alternated with Aconite or Gelseminum.

Cannabis-indica is also a remedy of great value in cases of this kind.

5. ARTHROPATHIE.—INFLAMMATIONS OF THE JOINTS.

ARTHROPATHIE.—WHITE SWELLINGS.

The Diseases of the Joints are divided into two grand divisions :

A. DISEASES OF THE SOFT PARTS.

External.

Internal	White swellings of Bell ; and diseases referred by Brodie to the ligaments.
Capsular	Hydarthus.

B. Cartilaginous, superficial, bony and deep-seated or parenchymatous bony arthropathie.

All of these forms of arthropathie may be, either rheumatic, scrofulous, tuberculous, syphilitic, scorbutic, cancerous, &c. ; or simply inflammatory.

1. *Extra Capsular Arthropathie*.—Stiffness, pain, irregular swelling, without effusion into the joint. This is generally a slight disease requiring some treatment corresponding with other phlegmonous, erysipelatous affections, or mere engorgement of the subcutaneous tissue, perhaps the bursae mucosa. If purulent collections are discovered we have to use the bistoury.

2. *Pure Capsular Arthropathie*.—Caused by sprains, external violence or rheumatic affections accompanied with pain on certain movements, and sometimes increased by pressure. These causes produce a swelling of the extracapsular layers, which leads to internal effusion. It is a more serious lesion than the preceding ; and it often proceeds forward to more serious disease yet to be described. It requires the most careful but efficient medication. Allopathic treatment involves “resolvent ointments, large blisters, compression and mercury.”

3. *Specific or Blenorhous Arthropathie*.—This comes on suddenly ; it is soon characterized by an abundant effusion ; with little pain in the first stage, it acquires all the characters of an acute arthritis in the second. The common treatment is rather evacuant and revulsive than antiphlogistic ; blisters, mercurial frictions, compression, evacuants, embrocations. They are never successful.

4. *Fungous Arthropathie*.—This is sometimes a primary, though oftener a consecutive disease ; always mild, little painful. It is announced by an elastic, thickened enlargement, sometimes rolling under the finger, like a foreign body ; occasionally, without effusion, the joint may acquire an enormous volume, without absolute hindrance to loco-

motion. It is generally serious from its obstinacy, sometimes resisting every thing. It never yields to bloodletting. The surgeons rely chiefly on blisters, resolvent ointments, cauteries, moxas, setons, escharotics, compression and debilitating doses of calomel. Brodie speaks of this case as one of "morbid change of structure," which he thinks to arise from "morbid action in the synovial membrane, which loses its natural organization (like the fungus articuli of the German writers,) becoming converted into a thick pulpy substance of a light brown or reddish color, intersected by numerous white lines. The disease seems to be peculiar to the synovial membranes having some affinities with tubercle, scirrhus, and fungus haematoles, in all of which the natural character is destroyed and a new one added. This change is most common in the knee-joint, where it is usually attributed to cold or sprains. In some cases we find what are called loose cartilages.

5. *Pure Synovial Arthropathie.—Hydarthus.*—This is a dropsey of the joint from inflammation of the synovial membrane, and subsequent effusion. It is essentially characterized "by a serous effusion without pain, or sensible thickening of the articular envelops, slightly hindering the movements of the joints. Here the surgeon has generally resorted to purgatives, mercurials, Colchicum or diuretics, associated with large blisters and resolvent frictions," and generally with very little success. All of these forms of disease have the common character of swelling and superficial pain from the beginning; and they never last long without changing the form of the part. The synovial membrane is proved to extend over the cartilages of the incrustation and the inter-articular fat, as the conjunctiva covers the cornea; and it has a strong functional and anatomical resemblance to the serous membranes. It seems that the disease seldom or never originates in the ligaments, but almost always in the synovial membranes, which are quite as often diseased as any part of the body. Cruvelhier says (*Dict. De. Med.*) the disease consists in nineteen out of twenty cases, of a chronic inflammation, commencing in this membrane, even when other tissues become involved.

B. 6. *Cartilaginous Arthropathia.*—This consists in an ulceration of the articular cartilages and of the synovial membranes investing them. There is a mechanical affection embracing ulceration and contusion of the cartilages and ulceration of the *synovial membrane*; or from the pressure of the cartilaginous surfaces on one another: it may be compared to a crushing, wasting, or excoriation of the organic plates. It comes on suddenly, and is announced by a crackling and by acute pain that ceases entirely while the limb is still, and recurs on certain movements. It is sometimes complicated by extending to the bones. A cure is commonly effected by absolute repose, or after the disappearance of the cartilaginous rugosities.

7. *Superficial Arthropathie of the Bones.*—This is generally over-

looked, as its cause is internal. It is announced by a dull pain where the joint is at rest, and acute intolerable pain is excited by the smallest motion. The effusion, swelling, &c., are secondary. The surgeons usually begin its treatment by bleeding, cups, leeches, mercurial purgatives. All of these measures, however, fail to give relief, and they resort to embrocations, blisters, or compression; then to moxas, the cautery, and, especially, absolute rest. They generally resort at last to amputation, or the inflammation terminates in ankylosis.

8. *Deep-seated Artropathia of the Bones.—Sorofulous Disease of the Joints.*—When it involves the epiphyses and not the shafts of the bone it is regarded as having its origin in the cancellous structure of the bone and has a malignant character. There is a dull deep pain during motion as well as when at rest; worst at night; there is no heat or swelling at first. It may last for months or years without effusion; sometimes it invades the cartilages of the incrustation, producing an excessively painful affection. It often embraces the head of the bone, where it gives rise to symptoms of mild acute inflammation, and finally assumes the character of exostosis with inflammation or ostitis. It is always tedious, often requiring amputation, and never ending happily until the elimination of the necrosed or altered tissue. It requires internal remedies. The common treatment consists of blisters, cauteries, moxa, but avoiding compression and other topical applications. Pain, the primary symptom of disease of the hard parts may exist for weeks or months without swelling. (*M. Velpeau, Mémoire sur les Tumeurs Blanches. Exposition nouvelle de ces Maladies, par Gustave Jeanselm, Paris.*)

TREATMENT.—The appropriate remedies in these cases are, Sulphur, Silicea, Calcarea-carb., Iodine, Rhus-tox., Arsenicum, China, Phosphorus, Acid-phos.

In order to prove effective these medicines must be given in the high attenuations, and be repeated at long intervals, in strict accordance with the directions of Hahnemann.

An expert selection of the remedies, high potencies, very rare repetitions of the doses, and patience, have often enabled homœopathic physicians to perform cures which have amazed the surgeons of the old school.

In these cases such a regime should be enjoined as shall promote the general health and rigor of the system.

Compression is a resource of great power. Apply a roller bandage so as to fill up all external inequalities; begin the application below the joint and extend a few inches above it. Blisters, ointments, &c., can be used at the same time. We may make permanent compression by pasting each surface of the bandage by starch or paste, and applying pieces of paste-board, as is often done in dressing fractures of the extremities. The patient may now rise and walk; and it is almost impossible for the joint to swell again.

ORDER IV.—DYSTHETICA.—CACHEXIA.—ABNORMAL CONDITIONS OF THE CIRCULATION DEPENDENT ON DETERIORATIONS OF THE BLOOD.

MICROSCOPICAL EXAMINATION OF THE BLOOD.—The red globules in man are small round discs, of which the central part of each appears shadowed or transparent, according as it is approximated to or removed from the focus of the lens. The central part seems to be the thinnest of the globule, which is depressed on both sides; and when placed on the field of the microscope, it presents the appearance of an elongated 8. The edge forms a thick ridge all around, more colored than the central part. The size of the blood globules varies in different animals. The elephant has the largest globules, among the mammalia, and the ruminantia the smallest. (*Mandl. Anatomy and Physiology.*)

The blood globules are suspended in a colorless fluid called *plasma liquor sanguinis*, or serum. In frogs it can be separated from the globules by filtering, though human blood can not be filtered.

White Globules.—These are small colorless finely granulated corpuscles, soluble in water, and strong refractors of light. Some are round and include two or three granules; these are true *lymphatic globules*, arising at least in part from lymph mixed with blood. The other white globules are also generally round, though sometimes oblong, or irregular, with edges slightly serrated. They are the product of the coagulation of the fibrin. (*Mandl.*)

State of the Blood in the Vessels.—Many authors have believed that the blood possessed some mysterious powers of vitality. According to the observations of Kolk, Treviranus, and others, the globules of blood possess a rotatory motion during life, independently of the motion arising from the impulse of the heart; and this motion continues till coagulation takes place. Schulz of Berlin has shown that the blood globules have a power "by which they move on by themselves, surrounded by envelops of coloring matter, and keeping at a distance from each other." Copland imputes this force to the influence exerted by the ganglial nerves on the interior of the vessels on which they are distributed. (See Vol. I. p. 843.) To this force of mutual repulsion we attribute the fluidity of the blood; but there is another force by which the blood globules are attracted by the tissues when brought in contact with them in passing through the minutest vessels. This latter force, first examined by Schultz, "may be compared to a vortex, whence globules constantly pass from the arterial or terminal capillaries, and are lost in the different tissues. So that although the vital endowment of the blood is manifested by its fluidity

in the vessels, it assumes an opposite manifestation in the capillaries, where this fluid is brought within the sphere of the vitality of the different structures; each one attracting from it those constituents of which itself is formed, and which are always present in healthy blood."

"Thus we see organization commencing in the chyle, advancing further in the blood, and reaching its acme in the vital attraction of the constituents of the tissues from the blood circulating in the capillaries which supply them. At this part of the circle, where the arterial capillaries, with the fluid circulating through them, become, as it were, confounded with the tissues in which they are distributed, there appears to be not only a constant attraction of particles by the tissues from the blood, but also an equal extrication of other particles from them into the blood received by the radicles of the veins." (Schultz.)

Coagulation of the Blood. — In the process of coagulation the red globules of the blood are principally concerned; "it being chiefly the result of the loss of the vital motion which these globules possess in the vessels, and of the attraction existing between the coloring envelops and central bodies. As the vital attraction which keeps the red substance fixed around the whitish corpuscles, ceases soon after the removal of the blood from the veins, these bodies can then obey the force which tends to unite them, and they then form a network, in whose meshes the liberated red particles are entangled, and thus produce the phenomena of coagulation. If the coagulum be exposed to a stream of water, the colored matter is washed away, while the aggregates formed by the colorless corpuscles remain in the form of filaments in which may be recognized an analogous structure to muscular fibre, and constitute the fibrine of the blood."

The phenomenon of the coagulation of the blood, is due to the evaporation of its ammonia, on exposure to the air. The blood is retained in a liquid state in the blood-vessels by the pressure of ammonia; and just in proportion to the loss or diminution of this substance, will it retain or lose its fluidity.

This may be readily demonstrated by draining blood from the arm into an exhausted receiver. Thus excluded from the oxygen of the air, it remains fluid; but if we expose it and collect the products of evaporation, it coagulates, and ammonia is found as one of the products of evaporation. This coagulated blood may be again redissolved, by incorporating ammonia with it at the proper temperature.

A knowledge of this fact may prove useful in many maladies which are accompanied with more or less decomposition of the blood, as diphtheria, typhus, malignant scarlatina, yellow fever, &c.

PLASMA.—*Constituents of Plasma.*—Water, fibrin, albumen, colorless corpuscles, volatile matter, fatty compounds, and salts.

Plasma passes through all the capillary vessels, permeating all or-

gans and tissues; and at various points the glands or deporating organs, remove from it the substances that if retained would injure its qualities. Many fluid substances, received by the stomach, enter the plasma and mingle with the fluid of the blood. These substances possess medicinal power of some kind, and they effect one organ or another, according to their specific properties.

1. The poisons taken into the stomach produce symptoms which manifest themselves in some one organ or more, but they do not cause the production of contagious matter in the blood.

2. Poisons inhaled from the atmosphere by the lungs often produce contagious matters in the blood. Thus showing that the two parts of the blood have distinct pathological relations. Experiments show that large quantities of some substances can be thrown into the blood without great injury, if not in some cases, with benefit. In 1831 and 1832 the effort was made to replenish the exhausted blood-vessels of patients sinking from cholera by injecting saline substances into the veins. In one case five gallons of saline liquid was injected into a vein in the course of four days: nine and a half pounds thrown in the space of 18 minutes (May 29), and a few hours afterwards 10 pounds more with 4 ounces of albumen. In a few hours 10 pounds, with 10 grains of sulphate of quinine; 10 pounds more of the solution the same day. June 2, six and a half pounds with six drops of solution of Morphia. June 19th, the patient was reported as well, and left the hospital.

Such facts, with the varying aspects of the people we meet with every day, show that the blood is constantly changing in its composition; and no two efforts at chemical analysis present similar results.

That the blood may be maintained in its highest state of perfection, and fitter for the supply of all the materials requisite for maintaining the system in health, and those materials only, it is necessary that the functions of sanguification, nutrition, depuration, secretion, and absorption should be kept in the most healthful condition. As they by their combined action convey into the general circulation the substances necessary for the supply of the waste of the body, or carry out of it those materials which are unfit for its purposes; so, also they may derange health by throwing into the blood poisonous matters taken up from the different absorbing surfaces, or by retaining within the blood these worthless or deleterious substances which the welfare of the body requires should be rejected and thrown off.

Changes in the Quality of the Blood.—The chemical constituents of the blood vary in different states of disease. The relative proportion of *Albumen* is increased in cases of active dropsy, and in most of the exanthemata, especially before the eruption appears. In many inflammatory diseases the quantity is twice as great as in health, and the blood feels viscid to the touch. (*Gendrin, Bright, Blackall, &c.*) The

watery portion of the blood varies from the influence of depletion, many fevers, and other chronic diseases. The coloring matter in the blood is changed in some febrile and malignant diseases, and after the operation of some virulent poisons, or morbid secretions.—The fibrine varies according to the extent to which blood-letting may have been previously carried, and the degree of vital energy present, or the febrile or inflammatory action prevailing. It varies in its quality in the last stages of some chronic diseases, in the cold stage of congestive fevers, and after exposure to extreme cold, forming fibrinous concretions on the lining coats of the blood vessels. In pestilential cholera, asphyxia and hydrophobia the blood of the arteries has been found resembling venous blood. The electrical state of the blood is also changed by disease; and its temperature has been observed to vary from 86° to 104°, according to the degree of nervous power in connection with vascular action.—(See Vol. I. p. 175.)

The buffy coat seen on the surface of blood drawn from patients suffering from inflammation is only conspicuous in inflammations of the serous membranes, the lungs, and other viscera; it is less strongly marked in children, in pregnant or puerperal females who have been often bled, in rheumatic subjects, and when drawn from a large-sized vein. The buff is also seen in some cases of anaemia and chlorosis; the blood in these diseases having lost its globules and retained its fibrin. In general anaemia there is a deficiency of blood globules; in health they exist in proportion 119 to 1000 parts of blood; whereas in anaemic patients they may be reduced to 65 parts in 1000. When anaemia arises spontaneously, says Andral, and also in pregnancy, and diseases produced by lead, the globules alone are deficient; but where this condition is produced by repeated blood-letting the blood comes to be deficient also in fibrine and albumen. In plethora the blood globules are increased from 119 parts in a thousand in health to 141 parts, the fibrine remaining in only the normal quantity. (See *Andral "On the Blood in Disease,"* 1844.)

But other changes in the intimate nature of the blood, which chemistry has no power to detect, occur in the course of various diseases. In many recorded instances the blood has been proved to have poisonous qualities; and terrible effects have resulted from its contact with the skin, cellular membrane, or wounded parts of persons previously in health. Even the fetor from the blood of diseased persons has often caused malignant and fatal diseases.

Distemperature or Dyscrasias of the Plasma of the Blood.—There are many varieties of changes of health, moods, tempers, feelings, dependent on the qualities of the blood. They may be caused by bad diet as well as other causes, and may be cured by attention to proper diet, good air and the proper regulation of the various functions; the

plasma having been changed in character, is restored by proper management, food or medicines, which restore to a healthy state the skin, kidneys, bowels. While the unhealthy state of the blood continues, the simplest wounds fester and ulcerate; there are eruptions, pustules or boils on the skin, slight external injury provokes chronic and ulcerative forms of inflammation with or without fever, appearing as acrofula or scurvy. In sailors at sea doted on salt provisions, who walk about the ship in a hot climate with the feet exposed, every mosquito bite ulcerates and the wound increases in size daily, resisting all local treatment till the diet is changed. Under proper food, and cooler air the wounds heal spontaneously. In some hospitals, bad diet, and air cause fractures to remain long without uniting, on removing to better air recovery takes place. After formidable surgical operations, if the blood is in good condition, free from any constitutional taint, there is early and safe recovery. In unhealthy subjects trifling wounds degenerate into chronic ulcerations.

In the latter case it is asked, (says Addison, *Braithwaite's Retrospect*, No. 41,) which constituent of the blood is diseased? Is it the plasma, or the portion from which the elements of repair are taken? Mr. Hunter says: "A person may have a sore upon the leg which is granulating freely, when all at once the granulations shall lose their life and fade away. New granulations may afterwards spring up and these shall undergo the same process, and so they will continue to go on, if some alterations in the nature of the parts be not produced in the plasma of the blood. The nature of the granulations will be determined by differences in the quality of the plasma."

It is thus shown that forms of inflammation, suppuration and ulceration are produced and kept up by distemperature or unhealthiness of the blood, more particularly of its plasma. And that a depurative operation is often performed in the plasma by forms of local inflammation may be argued from the eruption of small-pox.

In scarlet fever it is supposed from the properties of the particles of the exfoliating epidermis that the contagious matter from the blood is discharged by the vesicular action. In gout, that the offending matter is discharged from the blood by the local inflammation is also concluded from the morbid material deposited in the parts inflamed. Further evidences of the truth of this view are found in the great work of Rokitansky on Pathological Anatomy, and in the Lectures of M. Paget.

In ordinary inflammation the speedy separation of the plasma, or sinking of the corpuscles which occasions buffed blood indicates a change in the relative qualities of the two parts of the blood. We have accordingly the yellowish, greenish, purplish hues, and the flocculated appearance like curdled soap in the plasma of buffed blood before its coagulation, in different cases of inflammation.

The microscope reveals differences between the blood constituents when taken from the sphere of the inflammation or exterior to it. (*Addison, on Inflammation.*)

In the act of sloughing or separation of dead matter from the adjacent texture blood-vessels are severed by the process, and they are separated without bleeding. In abscesses and ulcerations from thorns or other foreign bodies impacted in the flesh, great changes may occur without bleeding. (*Brit. Med. Journ.*, April, 1859.)

In all cases of repair where exudations and new growth appear, the blood-vessels undergo the change from fibrous to corpuscular. Their component elements retrograde. This change is exemplified in granulations, the vessels of which bleed on the slightest touch, and we believe that in places of inflammation from disordered qualities of the plasma, the coats of the blood-vessels undergo the same changes.

Now as the plasma is the part of the blood that plays a conspicuous part in these changes, so it is not difficult to comprehend how it may be relieved of hurtful materials by inflammation.

"That sores give rise to very different kinds of pus," says Hunter, "is very evident to the naked eye; and that the different parts of which the blood is composed, will come away in different proportions, we can make no doubt; and we find that whatever is in solution in the blood comes away more in one kind of pus than another." It may then be presumed that inflammation exercises a therapeutical action in disordered conditions of the blood.

Zimmermann and Simon regard the fibrin as an exuvial matter or excretion of the corpuscles. Is there any incongruity in finding it to be an essential material, used in the maintenance and repair of the common blood-distributing tissue?

How does matter pass from the corpuscles into the Plasma? — Addison says it can be shown by experiment that molecular and tailed forms of some material substance may be seen issuing out of them and passing into the plasma, without much alteration of their form or color and to any one who witnesses the experiment there can be no difficulty in concluding that the corpuscles, in their natural state, discharge matter into the plasma.

He therefore concludes:—That the corpuscles of blood are sustained in their vital and chemical qualities by the plasma and the air; and also that their excretions are passed partly into the plasma and partly into the air; and these properties of the corpuscles being established, there are some broad and acknowledged facts respecting venous blood which claim our attention." (*Brit. Med. Jour.*, 1859, p. 352.)

CAUSES OF CHANGES IN THE STATE OF THE BLOOD.—*First.—Causes which vitiate the fluids from which the Blood is formed.*—Unhealthy food deranges the digestive function and poisons the circulating fluids.

The long-continued use of salt provisions, when too exclusively used, produces scurvy. Diseased rye causes chronic arteritis and gangrene of the extremities, diseased or putrid flesh has often induced malignant diseases; and the blood after death has been found fluid, dissolved, or blackish.

The habitual use of any article possessing medicinal powers has an influence on health. Acids, alkalis, turpentine, and all the chemical salts change the character and composition of the blood. The dried stale fish, used so extensively in some of the extreme parts of Northern Europe, produce diseases of that order which always arise from an impure state of the blood; and eating freely of fresh animal food, by increasing the fibrine and richness of the blood also predisposes to disease but of another order. Excesses in eating and drinking cause a large amount of disease in civilized life.

An imperfect performance of the functions by which morbid substances are expelled from the blood is one of the principal causes of disease. Perfect health requires a full performance of all the functions of *depuration*, including respiration, perspiration, and secretion by all the organs whose office is to eliminate effete or injurious substances from the blood.

Proofs that the Blood itself becomes poisonous in some diseases.—The blood in some diseases undergoes vital changes by which a poison capable of reproducing itself is originated. Dr. Home communicated measles by means of blood taken from persons affected with that disease. Duhamel gives the case of a butcher, who, having put in his mouth the knife with which an over-driven ox had been slaughtered, had his tongue and throat swollen a few hours afterwards, and an eruption of black pustules over his body. He died in four days. Another person having wounded himself in the hand with a bone of the same ox, was seized with inflammation of the arm, followed by mortification and death. Two females experienced gangrenous inflammation from a few drops of the same animal having fallen upon the hand of the one, and on the cheek of the other.

By numerous experiments it has been proved that inoculation with the blood of diseased animals, or simple contact with it, may produce the malignant pustule in men. Dupuy and Leuret introduced blood taken from a horse affected with malignant carbuncle into the cellular tissue and veins of a sound horse and thus communicated to him the same disease. The serious effects which follow wounds received in the dissection of bodies recently dead, as well as in those in which putrefaction has commenced, are quite common. “The *septic* influence of certain animal secretions and poisons on the tissues to which they are applied and on the frame generally; are among the most important phenomena of disease.” See Vol. I. p. 541.

Louis de Castro says the blood of two plague patients infected the air of their apartment with a foetid odor; Zentus reports the history of three persons who were struck dead by the odor exhaled from the blood drawn from the vein of a person infected with the plague. Muralt states that a cadaverous foetor emanates from the blood of persons affected with this malady; and Baglivi mentions that a nearly similar phenomenon was observed in the blood of patients in the advanced stages of a very fatal epidemic fever. Haller refers to a case of fever, in which he predicted from this symptom alone a fatal result. Instances have been published by Zurinus, Alprunner, and Vater, in which physicians were dangerously infected by the factor of the blood abstracted from the veins of persons in malignant diseases. Many have suffered in slighter degree from the same cause in more common diseases. Pringle says, an individual who had inhaled the blood of a dysenteric patient which had stood for some time, was attacked by the same disease. Morton has given the case of a woman in malignant fever whose blood was so offensive, when taken from the arm, that the surgeon and assistants fainted from breathing the odor.

The blood of cattle affected with "*the spleen*" is so poisonous that if the blood of such an animal only falls upon the hand it may cause dangerous disease; and the skinning or tanning the skins may have a similar effect. Their flesh, though salted and smoked, is a poison, and always produces death or lingering, incurable disease.

Symptoms of Spleen in Cattle.—The animal looks sad and dull; it stumbles and trembles, particularly after drinking; the skin is hot, breath short; and while the symptoms progress, inflammatory tumors are formed.

The Treatment of Cattle in this disease is hitherto confined to throwing cold water on them. Hering says, if this does not save them, they must die. The use of cold water is depended on to preserve other animals from the infection; those which die are buried in a deep pit without being touched with the hands. Every thing that has been in contact with the diseased animal is to be burned, buried, or purified with chloride of lime-water.

When this disease is communicated to man the infected person begins to feel "melancholy, weak, and chilly; red spots, black in the centre, show themselves on different parts of the body; these soon become bluish tumors, and, eventually, inflammatory gangrenous ulcers. The treatment is not satisfactory. Bleeding is dangerous; warm and moist poultices also do harm. It is thought best to rely on quiet, strict diet, drinking plentifully of cold water, and frequently throwing it over the patient, drying him quickly afterwards. Internally give Arsenicum, not too frequently." (Hering.)

In 1770, Fontana instituted a series of experiments on the effects of

the poison of the viper on animals. He procured 3000 vipers and employed 4000 animals which were bitten by the vipers in his presence, or otherwise subjected to the operation of the poison. From his six-thousand, experiments, he deduced the following results: In many instances, on injecting the poison into the jugular vein of rabbits, employing seven seconds in the operation, the animals cried out the moment the venom entered the vessel, were seized with violent convulsions and died in two minutes or less.

The blood in all the large vessels and also in the heart and auricles was black and coagulated. The action of the venom and its effect on the blood are almost instantaneous. The color of the blood is suddenly changed, and becomes from bright red immediately black; this effect is succeeded by the sudden coagulation in the heart, auricles, liver and large venous trunks. Thus "the circulation is totally stopped and the animal dies." The poison of a serpent applied to a naked nerve diffuses its influence with instantaneous rapidity. Dr. Mead says, the bite of a rattlesnake killed a dog in a quarter of a minute. Such is the close connection between the sanguiferous and nervous system that pain and irritation will effect a change, even in the appearance of the blood.

Many drugs have shown, when regularly taken for a certain period, the power to produce degeneration of the blood, altering its composition and appearance, thus producing dyscrasias or cachexias, each presenting its own peculiarities. Thus, Mr. Sharp, in a late work (London, 1861), gives the effects of Titanium in causing and curing "Blood Disease." He found it to operate upon: *First.—The Stomach*, bringing on nausea, loss of appetite, and feeling of discomfort.

Second.—The Brain and Nerves: giddiness, imperfect vision, the peculiarity being that *half an object* only could be seen at once; desire to keep the eyelids closed.

Third.—The Blood :—a perceptible derangement of the whole system, which could not, without danger, have been carried further."

He also "found Titanium a most valuable remedy for certain cases of degeneration of the blood, for which no good remedy was known before."

LATENT MIASMS OR BLOOD-DYSCRASIAS WHICH ORIGINATE OR PERPETUATE OBSTINATE CHRONIC DISEASES.—PSORA.—SYPHILIS.—SYCOSIS.

Hahnemann says (*Organon*, §. 204, p. 183) : "If we except all chronic maladies which depend upon a mode of living habitually unhealthy, as well as those innumerable factitious diseases, (V. §. 74), which arise from the senseless, protracted, the assaulting and ruinous treatment, even of slight diseases, by allopathic physicians, then all the remainder, without exception, are occasioned by the development of these three

chronic miasms, viz. internal *syphilis*, internal *sycosis*, but especially, and in an infinitely greater proportion, internal *psora*. Each of these is in possession of the entire organism, and has penetrated it in all its parts, before the respective primary representative and local symptom makes its appearance, which prevents the bursting forth of its corresponding miasm in another form, and is manifested in psora by a peculiar eruption, in syphilis by chancre and bubo, and sycosis in condylomata. Either of these chronic miasms being deprived of its local symptoms will, sooner or later under the influence of natural causes, become developed, burst forth, and multiply the incredible multitude of chronic diseases which for ages has afflicted the human race."

We perceive that the observation made by Hahnemann led him to believe that some one of these latent miasms or poisons constituted the basis of all chronic diseases; that these miasms might remain latent whether derived from inheritance or from infection; that there was no limit to the duration of their action; nor could revulsives ever by turning the vital force into new channels effect a real cure. This mode of proceeding might give the disease a new outward form, but it would only render the system more feeble and less able to react. Hahnemann says: "The more I examine the ordinary cures, the more I am convinced that they are not direct transformations of disease converted into health, but revolutionary disturbances of the order of things by medicines, which, without being actually appropriate, possessed sufficient power to give matters another (morbid) shape: these are what are called cures.

"The hysterical ailments of yonder lady were successfully removed by me." "No! they were only changed into a metrorrhagia." After some time I am greeted by a shout of triumph. "Excuse me! I have also succeeded in putting a stop to the uterine haemorrhage." But do you not see, on the other hand the skin has become sallow, the white of the eye has acquired a yellow hue, the evacuations from the bowels have become grayish white and the urine orange-colored. "And thus, the so-called cures go on like the shifting scenes of one and the same tragedy."

The frequent metastases of disease from the mucous membrane to the skin and its sudden recession to the internal surface have long been familiar to medical men.

The identity of structure of the skin and the internal mucous membrane as well as their identity of use is so well known that we may easily perceive that the eyes of pathologists could not avoid perceiving the possibility of the frequent metastasis of disease from one of these surfaces to the other. Wilson says:

"The skin is the exterior investment of the body, which it serves to cover and protect. It is continuous at the apertures of the internal

cavities with the lining membrane of those cavities, the internal skin or mucous membrane. Mucous membrane is analogous to the cutaneous covering of the exterior of the body, and resembles that tissue very closely in its structure. The epithelium is the epidermis of the mucous membrane. Throughout the pharynx and cesophagus, it resembles the epidermis, both in appearance and character.

That they exchange physiological functions is shown by Carpenter: "It is interesting to observe that when a portion of the cutaneous surface has been turned inwards, so as form part of the boundary of one of the internal cavities (as in plastic operations for the restoration of lips, eyelids, &c.), it undergoes a gradual modification of character and comes after a time to present the appearance of an ordinary mucous membrane." It is well known also that "when a portion of the mucous membrane is in the same manner turned to the surface, it assume, the appearance and the functions of the true skin."

M. Troussseau, of Hotel-Dieu, Paris, thus gives in the *Gaz. des Hôp.* 1857, p. 550) the fullest admission of the truth of Hahnemann's doctrine of psora: "The herpetic, syphilitic and strumous diatheses are equally manifested by cutaneous lesions and by those of mucous membranes. For the syphilitic diathesis, this is universally conceded: for the *dartrous*, do we not daily witness the transition of affections from the skin toward the internal organs, in gradation from the more superficial to the deeper, revealing unity of origin and cause? An eczma first appears upon the lip or nose; next, in the form of a chronic coryza or ozoena, as it traverses the sinuosities of the nasal fossæ; next the coryza may become an angina, taking the granular character of a herpetic angina. Women who suffer with uterine catarrhs the most intractable, have a chronic eczema of the uterus as others of the skin. And why should we shut our eyes to similar manifestations in the bronchiæ, or gastro-intestinal canal, betrayed in each site by functional derangements peculiar to the organ attacked? How often do we not witness the coincidence, or rather succession, of these internal lesions upon the cessation of herpetic manifestations on the skin?" "How often have sulphurous waters, so potent in bronchial and uterine catarrhs, cured them only by reaching the herpetic diathesis? At Cauterets, Bagnères, Luchon, Enghein, Aix-la-Chapelle, among the patients under treatment for chronic catarrhs by these mineral springs, you will find that the greater number have had, if not through their lives, at least in their youth, decided herpetic manifestations; and that whenever they reappear upon the surface, the internal organs cease to suffer.

"A dartrous subject may have to day no tetter: a strumous subject no scrofula; but the dartrous or strumous diathesis exists potentially, even during a latency of five, ten, twenty or forty years.

"Diatheses are impressed upon the constitutions of patients; they

THE CUTANEOUS FUNCTION.

The diathesis of his parents; and as the child grows up, will then bear the greatest impress of it, so the dangerous diathesis, which may make its first appearance on the

skin, is the gouty treatment against diathetic skin. This subject is that of Mr. Gastier. M. Troussseau says: "A herpetic subject takes a cold, gets a sore throat; the disease, excited by this irritation, takes possession of the skin, and gives us angina. In an arthritic subject, the disease may even occur upon a sprain, however slight, which may be the localization of a regular attack of gout. The parents may not reveal his scrofula until an arthritic affection degenerates into white swelling. In all of these cases, of course be general, and directed against the

whole body." All standard allopathic authors instructive observers, confirm the truth of Hahnemann's opinions. Dr. Budd* expressly states that a *morbid material* within the organism gives rise to all diseases and says that this *morbid matter* is often seen to be repelled from the surface, and, in consequence, produces internal disorders. Willan says:† "The peculiar morbid matter of one disease, which was before detained in the part affected and now it leaves with it, being now suddenly loosed and set afloat in the general circulation, has become free to fix on internal organs — to impinge on them with the blood, to affect the system at large." The removal of these morbid miasms is just as important to the practice of disease pathology as it was to Hahnemann's. According to Kussmaul, Pfeiffer and Schoenlein, important internal organs, as the heart, lungs, &c., & vessels, are liable to become most seriously diseased by this morbid matter locating upon them, after being set free from the external surface. In this way they account for the occurrence of scrofulous, and many other local affections commonly called scrofulous.

Dr. Schröder of Berlin, gives the case of a weaver aged thirty-four, who at the age of nine years took the itch which lasted three years. He was treated by Sulphur ointment. Nine months ago he began to feel an oppression of the chest, difficulty of breathing, weariness, &c., & pain of the heart, &c., on running, ascending the stair-case. In four months the disease became more violent, becoming established as an ulceration of the aortic valves, hypertrophy of the left ventricle, with a great enlargement of the left lobe of the liver, and commencing

* Medical Gazette, 1832. Med. Chir. Trans. 1842. † Cutaneous Diseases

The cause of this disease is referred by the author to the repelled itch at nine years of age. He says, Authenrieth directed attention to the *after-diseases* of the itch in 1807, before Hahnemann. He says he admits the existence of the *acarus insect*, as he has seen it, but it does not invalidate the old dogma of sequela to the itch. "How does the itch develop itself? Small spots first exhibit themselves, from which the itch pustules are formed. The existence of the acarus of the itch has not been proved; we might then call this a *filius ante patrum*. An evident contradiction. Again, the disciples of Raspail do not go so far as to assert that all itch-pustules are provided with this insect. If the acarus be the cause of the disease, why is not this insect present in every pustule?" He has "no doubt respecting the existence of *after or secondary diseases* of the itch." "It may not be generally known that an ulceration of the skin, of a peculiar kind, forms, especially in old people, principally about the knuckles or joints of the lower extremities, in consequence of the itch (the secretion of which ulceration is contagious), and which has obtained the name *Ulcus psoricum*, and no one will assert here that this ulceration was so formed by the itch insect; now, if this ulceration is caused to heal up suddenly, internal diseases of a peculiar character are produced, not only such as are created by the drying up of old sores, but *peculiar forms of disease*. This fact appears to me one of the most striking features in favor of the possibility of *after-diseases* resulting from the suppression of the itch." And "I confess that the reasons above given have impressed me with the most perfect conviction that itch is capable of producing after-diseases."

It is evident that Hahnemann did not intend to restrict the term *psora* to the special disease designated by Schoenlein and others as "the itch," but embraced a wider field including scaly, tetter, papular and other eruptions. Hahnemann cured the pustular eruptions he referred to with very minute doses of sulphur. It is known that the specific disease caused by the acarus is not so easily cured. It is not certain that Sulphur alone is a true remedy for it.

The whole allopathic school regard *repelled* diseases as capable of causing dangerous manifestations on internal organs; but they never go far enough to recognize the existence of the poison if it has never manifested itself on the surface in a visible eruption. Hahnemann goes beyond them all in discovering "the latent poison lurking within the organism, never having manifested its presence by any external signs," though able there to "seize upon the springs of health as surely as though it were repelled from the circumference." (*Adams, U. S. Jour. of Homoeop.*, Vol. I, p. 471.) The signification he himself attached to the term *psora* must be learned from his own words.

Hahnemann says: "I call it *psora*, with a view of giving it a general

designation." He never taught that the psora cause of disease was limited in its application to the itch. He says: "I am persuaded that not only the majority of the innumerable skin-diseases which have been described and distinguished by Willan, but also almost all the pseudo-organizations, &c., are with few exceptions, merely the products of the multiform psora." He evidently meant to teach that the great number of chronic diseases which afflict our race, "are due to a poison or miasm, latent in the body, acquired by the individual, or in some instances both, which becoming roused into action, ultimates in consumption, dyspepsias, haemorrhoids, asthmas, epilepsies."* This same miasm, as he called it, when thrown out towards the circumference, and ultimated upon the outer surface of the body, manifests itself in the form of boils, carbuncles, cancers, scald-head, tetterers," &c. "The term psora is a term of ancient origin, being used quite indiscriminately to designate every variety of chronic cutaneous disease." Hahnemann's psoric doctrine was familiar to all the old writers; and is equally familiar to the modern pathologists under the term of *dyscrasia*.

GENUS I.—ANÆMIA.

GENERAL REMARKS.—According to Troussseau the existence of a certain proportion of iron is essential to the perfection of the blood in its different offices of supplying the proper nutritious materials for the support of the body and stimulating the various organs to perform their proper actions. The quantity of iron is smaller in women and children than in men, and women are most subject to anæmia.

CAUSES.—Uterine haemorrhage; losses of blood from any cause; imperfect digestion and assimilation of food; variable appetite; constipation alternated with diarrhoea; menorrhagia.

TREATMENT.—When anæmia arises from recent haemorrhages or other debilitating losses, it may be remedied by *Ferrum*, *China*, *Natrum-mur.*, *Nux-vom.*, &c.

Ferrum has always been successful in pure cases of anæmia where the paleness and debility were dependent on an impoverished state of the blood, unconnected with local irritation or obscure inflammation.

The remedial powers of iron in various forms have long been known. In all cases of anæmia from losses of blood or other fluids the soluble forms of iron are most successful, as they are styptic as well as tonic. Troussseau gives the carbonate, or limatura ferri, incorporated in bread, and continues it long after the countenance has resumed its florid color. It is appropriate in any form in chlorosis and in the paleness and de-

* Prof. Adams, St. Louis, U. States Jour. Hom., Vol. I. 468. Hahnemann, Chronic Diseases Vol. IV.

bility which precede the deranged menses; and it cures scarcely any disease that is not connected with defective constitution of the blood. It is improper in all phlogistic cases.

Iron is proper in all anæmic cases of amenorrhœa ; dysmenorrhœa ; in dropsies dependent on impoverished state of the blood ; in intermittents in which there is predisposition to haemorrhages, congestions, or dropical infiltrations. We have seen many cases of this kind cured by chalybeate mineral waters and many more by Prussiate of iron. (Ferro-cyanate of Iron.) For the Abuses of Iron see Remarks on Ferrum, under Phthisis pulmonalis.

2. CEREBRAL ANÆMIA.—“CITY CACHEXIA.”

Morbid conditions of the brain of an anæmic character occur from long-continued dyspepsia, confinement in impure atmosphere. This cachexia of the great cities presents the following *symptoms* : Loss of appetite, confusion, giddiness in the head, violent sickness ; sleepless nights ; horrid dreams ; waking suddenly in the night ; noises in the head and ears, like the singing of a tea-kettle, or like something struck close to the ear, or water thrown on a hot iron, or a muffled drum at a distance ; falling to sleep and suddenly awakened by a feeling as if a sky rocket had rushed through the brain ; occasional deafness ; headache ; black and bright spots dance before the eyes ; languid, weak, irritable pulse ; cold skin ; pale flabby tongue. Occasionally there is partial loss of memory ; sudden startings up in the night ; giddiness of the head ; depressed spirits.

TREATMENT.—Better, though restricted diet, change of air; exercise without fatigue.

REMEDIES.—*Nitro-muriatic-acid*, *Pyro-phosphate of Ferrum*, *Cinnabar* in scrofulous cases, *Sulphur* 30th, one dose, repeating only at long intervals. *Sulphuric-acid*.

3. Anæmia Lymphatica.—In six cases of this affection given by Dr. Wilkes, in the Guy's Hospital reports, a “uniformity of lesion existed, too remarkable to constitute merely a coincidence of lesion between the lymphatic glands and the spleen, and therefore, there is without doubt a peculiar form of affection involving these organs, accompanied by anæmic cachexia, prostration and death.”

PATHOLOGY.—There is no excess of white corpuscles, but deficiency of the red, with the usual signs of progressive anæmia in either sex alike in the treatment. The glands enlarged were, the inguinal, sometimes the cervical, or axillary, or all at once progressing along the abdominal and thoracic glands to a fatal termination. A chain of tumors is sometimes encircling the arch of the aorta, or accompanying it along

the spine to the pelvis. The structure is fibro-nucleated, or fibro-plastic. (*Med. Chir. Trans.*, Vol 17.)

The spleen is not merely enlarged, but exhibits a lardaceous deposit, white or yellow, either finely disseminated or seeming to compose a large portion of the mass of the organ. Its duration may extend over several years.

TREATMENT.—In all cases recorded, the hospital treatment, consisting chiefly of iron was unsuccessful. A homœopathic use of the Iodide of iron, Iod.-potassium, Mercurius-hyd., or a general antipsoric treatment would be attended with better results.

A general anti-psoric treatment should be employed in the first instance. A favorable change, and perhaps a complete cure, may follow this course.

The medicines should be used at high potencies, and repeated but rarely.

Should a cure not result in a reasonable time, we should consult Ferrum-hydriod, Kali-hydriod, Mercurius-hydriod, and Iodine. These last remedies may be prescribed at the first, second, or third attenuations.

4. *Other Forms of Chronic Disease associated with a Latent or Repelled Dyscrasia.*—Hahnemann, in his efforts to unravel the mystery of chronic diseases, explored a few thousand of the volumes which contained what was then called the medical experience of the world, and found an immense number of cases recorded in which the suppression of skin-diseases originated other maladies equally obstinate and much more serious.

In his work on "Chronic Diseases," published in 1828, he gives a large collection of cases from various authors in which the following, among other chronic and some acute diseases were obviously originated by the repulsion of psoric affections from the skin; *First*,—asthma; suffocating catarrh; asthma with bloating and blueness of the face and general swelling; asthma with hydrothorax; pleurisy and inflammation of the chest; pleurisy and cough; obstinate and violent cough; haemoptysis; consumption; collections of pus in the chest; collections of pus in the mesentery; great disorganization of various viscera; cerebral degeneration; hydrocephalus; ulcers in the stomach; sphacelus of the stomach and duodenum; general dropsy; ascites; enlargement of the scrotum; swelling and redness of the whole body; jaundice; swelling of the parotid glands; swelling of the cervical glands; dimness of sight and presbyopia; ophthalmia; cataract; amaurosis; deafness; enteritis; haemorrhoids and haemorrhage from the rectum; pains in the abdomen; diabetes; suppression of urine; erysipelas; acrid, ichorous discharges; ulcers; caries of the bones; osseous swelling of the knee; pains in the bones; rachitis and marasmus in infants; fever with disorder of the kidneys; fever following external cure

of the scald head; fever with opisthotonus; fever with throat disease; tertian intermittent fever; quartan intermittent fever; vertigo and total prostration of strength; epileptic vertigo; epilepsy with dizziness; convulsions in many forms; apoplexy; paralysis; melancholy and delirium.

We select the following cases in which repelled eruptions caused disease of the eyes:

First.—Dimness of Sight and Presbyopia.—A girl, aged thirteen, had the itch, covering the limbs, face and other parts. It was removed at length by ointments, containing zinc and sulphur. Immediately afterwards her sight became gradually weak. Dark bodies passed before the eyes, which were seen from without, floating in the aqueous humor of the anterior chamber. At the same time the patient could not distinguish small objects without the aid of glasses, and the pupils were dilated. (*Hoffmann, Consul. Med.*)

Second.—Ophthalmia from repelled Eruption.—A young woman had an abundant psoric eruption on the legs, with large ulcers below and behind the knee. The small-pox with which she became infected, freed her from this exanthem. There ensued during two years a moist inflammation of the whole eye, and of the eyelid, with itching and ulceration, and the perception of dark bodies moving before the eyes. The patient became infected with itch by wearing for three days the stockings of another child. The third day she was attacked with fever, dry cough, tension in the chest and tendency to vomit. Next day there was perspiration with erysipelas of both legs which soon degenerated into the real itch, from which time the sight improved. (*Wedel, Snetter, Hallmann. 1776, Koenigl. 210.*)

Third.—A man, in whom the psoric eruption had been removed, but who was in other respects well, became affected with cataract. (*Ludwig, Advers. II. 157.*)

Fourth.—A repelled itch, excited amaurosis, which ceased on the reappearance of the psoric eruption. (*Northof, Diss. de Scabie, 1792.*)

Fifth.—A robust man who had been treated for the itch by repelling it from the skin became affected with gutta serena, and remained blind till his death at an advanced age. (*Ludwig.*)

Sixth.—In another case amaurosis, with frightful headache, was caused by curing itch on the surface. (*Fabricius, Cent. II. obs. 39.*)

TREATMENT OF MORBID STATES OF THE BLOOD.

The usual means generally resorted to to furnish the best materials for the formation of the blood: are the expulsion of impure matters from it through the secretory functions; the support of the vital energies; the evacuation from the prima-via of all morbid secretions; and the restoration of general healthy action through the influence of tonics. Besides all of these results homœopathic remedies aim at the

more deeply-seated causes of disease, and strike at the hidden sources of hereditary evils and transmitted maladies.

Though old school men aim at the same thing, they defeat themselves by excessive medication, and thus *produce aggravations* instead of satisfactory cures. On this point Hahnemann says:

"When the patient afflicted with itch, after taking Sulphur, complains that the cutaneous eruption grows worse, the physician who is ignorant of the cause, consoles himself by saying that the itch comes out entirely before it can be cured; in reality the exanthema is caused by the Sulphur, and assumes an appearance similar to aggravated itch. Leroy says, *viola-tricolor* commences its action by rendering the cutaneous eruption of the face worse, though it subsequently effected a cure. The dose was too large, though the remedy was homœopathic."

Lyssons says (*Med. Transac.*, Vol. II., London, 1772): the skin-diseases which yield with the greatest certainty to elm-bark, are those which it first aggravates. If he had given smaller doses he would not have caused the aggravations.

In chronic (psoric) diseases the aggravation produced by homœopathic remedies (antipsorics) occurs from time to time for several days; after remedies whose action continues long we may see during the first six, eight or ten days some apparent aggravations of the original malady. "When these days are past, the curative effect of the remedy continues for some days longer."

We are often called upon to prescribe for the *results* of disease, as well as for disease actually existing; even here, however, we are governed by all perceptible symptoms now existing, whether they evidence present diseased action or show where diseased action has been progressing at a former time. We find these *results* of former disease in all protracted cases, in all chronic diseases.

It has been already shown that remarkable diminution or exhaustion of nervous energy generally renders the blood dark-colored, prevents its fibrinous particles from adhering into a coagulum when removed from the veins, causes a disposition of the coloring matter to separate from the central corpuscles, and occasions a diminution of its saline ingredients. It has been also seen that various articles received through any channel into the blood change its chemical and physical character. We may then be able to correct diseased states of the blood by introducing medicinal agents through the same channels. Page 178.

First.—Treatment of cases, in which buffy or inflammatory blood is present.—Gelsemium, Aconite, Stibium, Ipecac, Bry., &c.

Second.—Blood with loose Coagulum, &c.—This state arises from weak, nervous influence and vascular action, and is usually treated with tonics, or stimulants, chalybeates, mineral acids, and metallic salts. When the blood is of a dark color, Ammonia, Arsenicum,

Carbo-veg., China, are to be considered. In diseases, in which the blood is thin and dissolved as in scurvy, also in malignant and adynamic diseases, vegetable acids, as the citric acid, or vinegar, are the chief remedies. Vinegar was used by the Carthaginians and Romans in all their campaigns; and it has a tendency to prevent the attenuation of the blood caused by excessive fatigue. The power of citric acid is now well known in preventing scurvy. (See *Copland*, Vol. I p. 248.)

GENUS II.—HÆMORRHAGIA.—HÆMORRHAGES.

Bichat made the first real advances into the field of pathology which is now so extensive; and to him we owe the first rational generalization of facts in the study of hæmorrhages. He showed that there are general features which are common to all spontaneous flowings of blood, and classifies them according to the organs in which they occur.
- We proceed to notice the most important forms of hæmorrhage.

1. TRAUMATIC HÆMORRHAGE.

Treatment of Hæmorrhage from Wounds.—A wound, well closed and dressed, generally ceases to bleed. When there is danger of bleeding a compress may be applied over it and retained by a bandage. Cold water, immediately applied, will stop bleeding from small vessels.

When the bleeding vessel is larger, as some about the throat, thigh or arms, the whole limb or side of the neck may be compressed by placing a finger on the trunk of the bleeding vessel. If it be an artery the fact is known by the blood being of a light vermillion red color, flowing out in jets at intervals as the pulse beats. In this case the danger is greater, and the best surgical measures are imperiously required. Temporary safety may be procured by binding a bandage tight around the limb between the wound and the heart so as to compress the bleeding artery, the location of which is known by its beating. If the bleeding does not at once cease, find the exact site of the artery, feeling for the pulsation with the finger, place directly on the spot a piece of cork and press it down upon the artery till the bleeding is effectually stopped. A bandage applied around the limb, so as to compress the cork firmly on the artery, will restrain the flow of blood till better means can be obtained.

Give only cold drinks, keep the limb elevated; place no unnecessary dressings over the wound; keep it cool with cold water. If fainting occurs it is beneficial, as it permits coagulation of the blood. If the faintness comes on after great loss of blood, the patient becomes blue

in the face, has twitching of the limbs, there is danger. Give *China*. If he does not revive sufficiently give good wine. (*Hering*.)

When the loss of blood is likely to become serious, the tying of the bleeding artery is the only reliance. This even when the vessel is small requires some skill and knowledge of general surgical principles. These have been greatly improved within the present century. It was a maxim of Hunter to "take care of the *vasa vasorum*," and of Scarpa, Crampton and Travers, that we should "never cut the arterial tissue." Physic and Cooper improved the practice by using a ligature possessing the property *dissolubility*. Cooper first used it in 1814. And A. Cooper in 1817 tied the femoral artery of a man aged 80, and healed the wound by the first intention; which proved the great superiority of this method over that of Scarpa.

It has been proposed to combine all the advantages of former methods. The rule of avoiding the cutting of the true *vasa vasorum* is good; these minute vessels should not be strangulated with the ligature. To avoid this, and yet secure the vessels, Cooper directs the ligature to be made of *buckskin*, very soft, and a little broader than the thickness of the skin; and it should not be too tightly drawn. The wound will generally heal by the first intention; and, if it should not, there will be no suppuration and the wound will soon close; and a capsule will surround the ligature if the capillaries are not too much injured; or the ligature will be surrounded by lymph, and will soon be dissolved. After using the animal ligatures several years no secondary haemorrhage has resulted; the ligature never slipped, other applications were never necessary; and the wound nearly always healed by the first intention.

As traumatic haemorrhages arise for the most part, from strictly local injuries, the treatment cannot be regarded as with the scope of any general therapeutic law. The local appliances of the surgeon will therefore be regarded in these cases. But when the general system becomes involved, and diseased action becomes developed, then our law of cure comes in play, and the appropriate homœopathic medicines must be prescribed.

Styptic for Local Application.—The following formulæ has been published by M. Hannon: (*Bulletin Gen. de Therap.*)

Benzoic acid, 1 part: Sulphate of Alumina and potash, 3 parts; ergotine of bonjean, 8 parts; water, 25 parts. Mix.

The whole is to be boiled for half an hour in a porcelain capsule, constantly stirring, and replacing the evaporated water by hot water. Evaporated with the constant agitation to the consistence of an extract, it presents a chocolate-brown color, strongly astringent taste, and an odor of ergotine. This, says M. Hannon, is the most ener-

occur in the serous membranes, as we sometimes find bloody serosity in the intestinal cavity; and also in the cellular tissue. Such are those which produce scorbutic spots. Those of the skin are of rare occurrence. Finally, glands have been observed to exhale blood.

Hæmorrhages by exhalation in mucous membranes, as elsewhere are of two species: passive and active. Active, when they are accompanied with development of the vital forces; thus they have this character in the nasal passages when we notice a titillating sensation, together with a slight pain and redness. At other times they are entirely passive, as when they occur near the close of some organic affection characterised by debility.

Symptoms of Excessive Loss of Blood.—The loss of blood manifests itself in paleness, coldness of the surface; dimness of sight is a prominent symptom. Marshall Hall describes a case of a lady dying from uterine hæmorrhage. The pulse was imperceptible and she was "tossing in that restless state which is so fatal a sign in these terrible cases. She asked: 'Am I in any danger? How dark it is! I can't see!' The light of the window was shining full upon the bed. The pupil was completely dilated and motionless before the light."

When women recover from this state, or have lost much blood, they will probably have distressing headache with throbbing of the head; noise in the ears, colorless complexion; quick weak pulse, all of which symptoms are greatly increased by exertion.

For such symptoms some formerly tried bloodletting; if they found relief for a few hours it was always followed by renewal of the nausea, throbbing headache worse than before. Indeed, the condition is one of anaemia; it is the acute state of what is otherwise called chlorosis; that pale-faced amenorrhœa which occurs either in puberty or after life, and is cured by a similar treatment.

Ipecac.—Many old authors succeeded in curing hæmorrhages with Ipecac., while others, as Murray, Scott, and Geoffroy saw hæmorrhage caused by it.

If F. Hoffmann praises the efficacy of *Millefoil* in various cases of hæmorrhage; if G. E. Stahl, Buchwald and Læseke have found this plant useful in excessive *haemorrhoidal flux*; if Quarin and the Editors of the *Breslauer Sammlungen* speak of the cure it has effected in *haemoptysis*; and finally, if Thomasius, (according to Haller), has used it successfully in *uterine haemorrhage*; these cures are evidently owing to the power possessed by the plant of exciting *intestinal hæmorrhage* and *haematuria*, as observed by G. Hoffmann, and more especially of producing *epistaxis*, as confirmed by Bœcker

Hæmorrhage from the Lungs. See Vol. I. p. 797;

Hæmorrhage from the Stomach. Vol. I. pp. 413, 866.

Hæmorrhage from the Teeth. Vol. I. p. 237.

Hæmorrhage from the Kidneys. Vol. I. pp. 785, 600. Vol. II. p. 70.

Hæmorrhage from the Rectum. Vol. I. p. 392.

Hæmorrhage from the Nose. Vol. I. p. 430.

GENUS III.—PURPURA.

This name is applied to an efflorescence consisting of small, distinct, purple specks and patches, attended by general debility, but with little appearance of fever. The efflorescence depends upon an extravasation of blood from the fine vessels under the cuticle. The only form of it that deserves our attention is :

1. PURPURA HÆMORRHAGICA.

Diagnosis.—The disease is characterized by the appearance on the skin of petechia, or purple spots of large size interspersed with vibices and ecchymoses, resembling the marks made by the stroke of a whip, or by violent bruises. They appear first on the legs, afterwards on the thighs, arms and trunk of the body; the hands are seldom marked with them and the face remains free. On their first appearance the spots are of a bright red color, but they soon become purple or livid; and when about to disappear they change to a brown or yellowish hue; the cuticle over them appears smooth and shining, but is not sensibly elevated, except in a few rare cases in which it has been seen raised into a sort of vesicle containing black blood, especially on the tongue, gums, palate, and inside of the cheek. The gentlest pressure on the skin, as that of feeling the pulse, will often leave a purple blotch like that left after a severe bruise.

Purpura hæmorrhagica occurs in persons who have a constitutional tendency to hæmorrhages, from all the surfaces covered by the delicate epithelium as well as from the skin; they are therefore subject to large losses of blood which are often rapidly fatal. Sometimes the hæmorrhage occurs every day at a stated hour; at other times there is a slow, but almost incessant oozing of blood from the gums, nostrils, throat, inside of the cheeks, tongue or lips; sometimes from the lining membrane of the eyelids, the urethra or external ear; also from the internal cavities of the lungs, stomach, bowels, uterus, kidneys and bladder.

Symptoms.—The appearance of the disease is preceded by great lassitude, faintness, pains in the limbs, though in some cases the patient had been in previous good health. The feelings most complained of are extreme debility and depression of spirits; the pulse is feeble and frequent; and there are heat, flushing of the surface, perspiration and other accompaniments of fever. When the disease has con-

tinued for some time the patient becomes sallow and emaciated; the lower extremities show œdematosus swelling which afterwards extends to other parts of the body. The duration of the disease is in some cases limited to a few days, in others it has continued for months, and even years. It occurs at all periods of life, but is more common among women, and in boys before the age of puberty.

CAUSES.—Depressing influences which operate by depressing the vital powers; sedentary occupations; residence in close crowded situations; consequences of acute exanthematous diseases, as small-pox, measles, or puerperal confinement; the ancients attributed the haemorrhages which attend purpura haemorrhagica to morbid enlargement of the spleen. In children it is often originated by insufficient or improper food; in nursing women its causes are similar to those which in other persons produce stomatitis materna. (See Vol. I., p. 740.)

TREATMENT.—When it occurs in women and others too much confined within-doors or imperfectly nourished by food, the treatment will be commenced by improving the diet and prescribing change of air, exercise, travelling, at least by being carried abroad. When there has been no restriction of diet, no close confinement, and no debilitating disease has preceded, a different course may be suggested which in its details will be regulated by the peculiar circumstances and features of the individual case.

2. *Purpura Urticans*.—**DIAGNOSIS.**—This form of purpura commences with the appearance of rounded and reddish elevations of the cuticle resembling the wheals of nettle-rash, but without the itching and tingling of that disease. The tumors gradually dilate, but within one or two days they subside to the level of the surrounding skin; their hue becomes darker, and finally livid. They are most common on the legs where they appear with petechiae, but they also appear on the arms, thighs and breasts. It usually occurs in summer, and lasts from three to five weeks. It is occasionally preceded by stiffness and weight of the limbs, and some œdema accompanies it.

3. *Purpura Senilis* appears principally along the outside of the forearm in elderly women, in successive dark-purple blotches of an irregular form, and various in size. Each of these continues for seven or ten days, and then the extravasated blood is absorbed.

TREATMENT.—The principal remedies are: China, Hamamelis, Arsenicum, Sulphur.-acid, Gallic-acid, Ammonium-carb., Secale, Carbo-veg.

Acetate of Copper.—A girl aged seven years and a half, has had on her skin for eight days, dark red spots from the size of a millet-seed to that of a shilling; the spots especially occupied the upper half of the body, the chest, upper arms, face, and mucous membrane of the mouth. Otherwise the health seemed undisturbed. The urine in normal condition. For five days the chloride of iron was administered, but

the spots only increased in size. On the forehead, both eyelids, and elbows, bluish ecchymoses of the circumference and height of half a walnut arose. From one alveolar process from which the child had herself extracted an incisor tooth two days before, blood constantly flowed; her cheeks and lips were pale; her strength gone. Something of the acid order was given which checked the hæmorrhage; but after eight days' trial it was given up, for fresh spots appeared; and a boil of the size of a moderate apple developed itself on each shin-bone.

The acetate of copper was given in solution, (a few drops per hour,) July 9th, and it at once arrested the progress of the disease July 18th. A smart itching of the spotted portions set in; this was followed by the usual change of the purple hue of the ecchymosis shining through the skin which became green and yellow. And by a week more all morbid symptoms had disappeared. (*Dommes.*)

2. A child aged seven years, complexion dark blond, showed a great number of dark purple red (but not bleeding) spots of various sizes, which had made their appearance twenty-four hours before, and occupied almost exclusively the upper part of the body, including the tongue. General health not otherwise changed, urine of ordinary color and chemical properties. Arnica was tried, but it failed to do good, and produced visible aggravation. After four days (or Oct. 31st, 1848,) frequent bleedings of the tongue commenced; the strength decreased. Acetate of copper employed after this (in a solution of gum water and cinnamon water) produced in this case also a rapid and perfect cure, preceded by the same itching of the skin and change of color. (*Dommes.*)

3. Dr. Marx, of Cologne, court physician, reported the following: "A man of melancholic temperament, who had been taken ill on a journey, consulted Dr. Marx in 1772. He complained of feebleness and want of appetite, had a dry cough, not very severe, and at times expectorated blood. On various parts of his skin bluish red spots were seen, and reddish blue stripes under the tongue. Pulse small and irregular; blood occurred in the urine and stool and also in the saliva. Respiration difficult, with cold and hot fits. The above solution of copper vitriol in cinnamon water. In three weeks all morbid symptoms had disappeared, and the patient was able to continue his journey. (*British Jour. Hom.*, 1860, p. 542.)

4. Case by Dr. Searcy. (*Transaction of the Med. Society of Tennessee.*) A girl aged twelve years, after fever for nine days, was convalescing. Was very pale and feeble; fainted on being raised; surface unnaturally cool; restlessness; thirst; headache; tongue pale and flabby; pulse scarcely perceptible and extremely frequent; tenderness of epigastrium; bowels constipated; and constant oozing of blood from the nares and throat for forty-eight hours, causing extreme ex-

haustion. On the face a few red and blue patches; also on other parts, as the limbs, inside of the lips and cheeks, from the size of a pin-head to a five-penny piece.

She has always been delicate, is nervous-sanguine, bleeds often from the nose in health. Hæmorrhagic tendency or scrofula not known in the family. She took small doses of Saccharum-saturni, every hour for seven hours, at which time the bleeding ceased. Solution of the same injected into the nares. A blister was applied to the back of the neck and to the calf of each leg. The pulse became stronger; still there is thirst, tender epigastrium; tongue pale and flabby. Under the use of elixir-vitrol, lemonade, light food, &c. She recovered. Sulph.-quinine and the mineral acid perhaps insured the favorable result. Under them the purpural patches ceased to appear on the skin and the old ones faded away as strength improved.

GENUS IV.—TOXÆMIA.—BLOOD-POISON.

1. *Toxæmia Mercuriale*.—Persons long exposed to breathing mercurial vapor suffer depression of the vital powers; the process of animal calorification is imperfect; and it is quite common for such persons to be affected with ulcerations of the mouth and fauces, and with "painful or rheumatic affections of the periosteum, joints, limbs and ligaments, particularly after exposure to cold." Eruptions occur on the surface of the body with other phenomena, "to which the term pseudosyphilis has been applied; as well as many of those symptoms usually denominated cachectic." The same effects occur from what is called "a mild, but long-continued mercurial course."

The poisonous influence of Mercury was exhibited on a grand scale on board the British ship referred to at Vol. I, p. 95. Thirty tons of the liquid metal was picked up and confined in bladders placed in barrels stowed away in boxes in the bread room. The bladders were wet and soon decayed; the heat of the weather caused them to burst; and the greater portion of the metal was secured in casks, though a large quantity escaped and found its way into the crevices in the lower parts of the ship, where being covered with bilge-water it soon began to be decomposed. Then efforts were made to purify the ship by removing the bilge-water, provisions and stores, and washing every part of the suspected surface: and every man employed in this work or in the steward's apartment, was speedily affected with the poison. Ptyalism began among the officers and men, and further attacks continued to occur for two months or more. Nearly all the sheep, pigs, goats, poultry, mice, cats and dogs speedily died. Canary birds, fed on food corked up in bottles, also died. Many persons suffered from severe ulcerations of the mouth, partial paralysis, bowel complaints. Old ulcers previously

healed, broke out again, and assumed a gangrenous appearance. The mercurial vapor developed phthisis pulmonalis in three men who had never before been on the sick-list; they all died. Two more were left at Gibraltar with confirmed phthisis. In two ptyalism degenerated into gangrene of the cheeks and tongue and ended in death. A woman confined with a broken limb lost all her teeth, and many exfoliations took place from the upper and lower jaws. The poisonous effects were then attributed to mercury soaked in the bread, and 7,940 pounds of biscuit were condemned as unfit for use; but it was afterwards ascertained that the poison was chiefly received into the system in a state of vapor.

When gradually introduced into the system, mercury produces: tumors that are slowly developed; severe ptyalism, gangrene and ulceration of the mouth and throat; palsy, various nervous and inflammatory affections in different parts of the body; protracted dysentery. The effects observed on the slaves who work in the quicksilver-mines of Almaden, are: Swellings of the parotids, aphthous sore throat; salivation, eruptions, pustules; scurvy and tremors. Merat mentions one death from profuse salivation and gangrene, and two others from mercurial marasmus. A barometer-maker and his assistant slept in a room in which mercury in a pot on a stove was heated by a fire made by mistake. The latter lost all his teeth by salivation, the former was affected with shaking palsy which lasted the rest of his life.

Ptyalism is sometimes excited by a warm bath containing an ounce of corrosive sublimate in twelve gallons of water repeated every three days. The effect is seen after the third bath, if not sooner. This powerful agent is sometimes applied as an escharotic for the removal of cancers. In the case of a lady on whom we had declined to make an application of this kind an itinerant practitioner applied a plaster of this poison an inch and a half in diameter on the surface of a cancer on the breast. He encouraged her to endure the agony it inflicted by assuring her that the swelling mammary veins were only the "the roots" of the cancer ("the crabs claws"), which were being rapidly extracted. She lived several days under the local torture of the burning escharotic and the irritative fever; and then died under the constitutional effects of mercury, including the gastric inflammation and dysentery caused by the poison when taken internally.

2. *Toxæmia—from the Poisonous Effects of Tobacco.*—In 1849, the French Minister of the Interior requested the Academy of Medicine to appoint a Commission to examine and report upon the health of workmen employed in the manufacture of tobacco. Dr. Mélier was appointed to perform that duty. His Report says:

"The manufacture of tobacco effects, in the long run, upon a certain number of workmen, a profound and specific change deserving all at-

tention. There is a peculiar alteration of the complexion—not simple discoloration or mere pallor, but a gray sallowness—a mixed shade between chlororis and certain cachexie. The physiognomy is so far modified by it, that a practiced eye might with some exceptions, recognize those *who have long worked in tobacco.*

"The preparations of Iron remedy this state, and restore to the workmen their primitive color. Mr. Hunteaux, the physician attached to the Gros Caillon hospital, has remarked that workers in tobacco, when bled, in the cases where bleeding appears to be indicated, do not present a buffy coat upon the blood; or if there be one, it is usually very soft. Is the blood then modified to such a point that a part of the fibrine has disappeared?

"They fall away and change rapidly. We have seen a fine-looking soldier, aged 29, who, on leaving the first Lancers, entered the factory a year ago fresh and fleshy. Now he is thin, and his complexion has the peculiar sallow; he has lost his strength. Another mentioned that he had lost ten pounds in a short time. It is believed that the average of life is shortened among workmen employed in tobacco. Most of the aged workmen are asthmatic, or at least short-breathed.

"The first impression has something more or less painful for workmen who enter the factory, and they have, nearly all, a certain difficulty in accustoming themselves to it. Many can not become inured to it, and have to leave the factory. We have known but one out of five who was able to remain, of those who entered during our visits. One out of five! these are figures that deserve to be noted. But this is certainly not the case with smokers. They suffer,—indeed their first sensations are intolerable; but a kind of silly pride resists disgust and pain. They suffer, but they smoke; then the disgust lessens, the pain is blunted, the habit formed, and the evil takes its course. Hence we often meet, among habitual smokers, men who, by reason of their temperament, or of certain innate peculiarities, would certainly have been obliged to renounce the frequentation of the factory, and to whom tobacco must be especially hurtful." (*Journal de Societ. Gallicane.*)

Dr. Teste of Paris says many of the ordinary infirmities of the votaries of tobacco are attributed by themselves to some other origin. Thus, one digests badly; another has palpitations; a third finds his sight failing in the evening, or can read only by closing one eye, as if he squinted; a fourth complains of itching with red or yellowish spots on his chest and shoulders; a fifth has stiches in the side, darting pains in the temples, or buzzing in the ears, &c., or corns on his feet so painful as even to prevent sleep at night. Though many organisms bear for a long time the poisonous powers of tobacco, they are never secure against the sudden outbreak of acute symptoms. Beyond the

point of saturation there is every thing to be feared. In one case a gentleman aged forty-two who smoked seven or eight cigars a day from his twentieth year without inconvenience. He complains now of "irritation of the bowels, has considerable emaciation, especially of the lower extremities; general sense of weakness; chilliness; absence of fever; the pulse rather weak, but regular, never more than seventy or seventy-two, even after meals; temper mild though keenly anxious about his condition; sleep bad, often interrupted by cough or colic; skin natural, tongue clean; appetite great; faintness when the meal is delayed; fits of canine hunger; does not spit even in smoking; pinching of the stomach after a meal; followed by diarrhoeic stool, recurring three or four times during the day; irritation of throat or windpipe; violent spells of dry cough especially at night; dull pains in the sides, alternating with sore throat; stools often diarrhoeic, often violently so, with hard gripings, sometimes lasting several days, followed by constipation.

In this case all treatment failed till smoking was abandoned, "and then almost immediately the digestive functions returned to their normal state. In another well-marked case in which the derangements caused by tobacco were very extensive and the army physicians had diagnosed cancer of the pylorus. Dr. Teste failed with all his remedies. In the course of two years he found the patient in perfect health. To the inquiry "how he had been cured the patient replied, as if confiding a secret: "I smoked—you did not know that, perhaps. One fine day I stopped smoking, and from that day my cure dated." (*Jour. Soc. de Gallicane.*) For other Drug Diseases see their Names.—*Index.*

PHTHISIS PULMONALIS.—CONSUMPTION.

THE NAME.—*Phthisis* (from, φθιω, to consume.)

SYNONYMS.—*Tubes Pulmonalis*, of Cullen, *Maraasmus Phthisis* of Good. It has been defined to be "a depraved constitutional state, tending to the deposition of tubercle in the air-cells of the lungs."

PROMINENT SYMPTOMS.—Emaciation; debility; cough; hectic fever; purulent expectoration.

DIAGNOSIS, PROGRESS AND TERMINATION.—The most common period for the occurrence of phthisis is between the ages of eighteen and thirty; and it is probable that more deaths occur in persons under the age of eighteen, than after thirty. It is calculated by Drs. Forbes and Clark, "that above one-quarter of the individuals who die before the age of puberty, die of tubercles!" It is also estimated by the latter gentleman, "that the maximum of mortality in this disease is at thirty, and that from this point it gradually diminishes." No age, however, is exempt from it; for infancy, childhood, youth, manhood, and extreme

THE SANGUINOUS FUNCTION.

subject to its withering influence. Between years about three-fifths of the deaths

From this age to twenty-five the vice-

— sexes, particularly those who possess

— mental endowments, and the subtlest

— just reaching "the verge of woman-

— with the most enchanting promises,

— in the guise of consumption ; and the

— and his triumph is celebrated

— and two. Many a young man who has

— constructed an ambitious vision, is

— in his eagle-eye has been steadily

— sand storms ; but the moment he dares

— has dogged his steps, unseen, through

— leads him from the presence of Hope

— profound interest must the physician

— the path is constantly thus marked !

— fully developed, is beyond question

— the physician may palliate symptoms,

— durable period the fatal termination of

— have those foreign accumulations which

— by a gradual absorption or in any other

— formation of ulcerous excavations ; nor

— cavities when once formed, since they are

— and irritated by the incessant motions of

— of spontaneous cures of ulcerated lungs

— others, are only exceptions to the general

— advanced. Much, however, may be done in

— while the tubercles are yet small, and but

— them in a latent condition for an indefinite

— aware that in some instances there will be

— the part of the physician, in detecting the

— disease at this early period, but by watching

— indication of disturbance connected with

— ascertaining whether any hereditary pre-

— family, by examining the physical conforma-

— respirations, as relates to their strength, free-

— and whether unduly increased by exercise ;

— minutely the previous history of the indi-

— able to judge whether any cause may have been

— that originate the disorder, we may be able to

— as shall retain the tubercles in a latent and un-

— and thus for years prolong life.

STAGES OF THE DISEASE.—1. STATE OF CRUDE TUBERCLE.—

Small disseminated tuberculous deposits. 2. Stage of abundant deposition, involving solidification, followed by softening. 3. Stage of excavation,—the tubercles having softened and, in discharging formed cavities.

The laws observed by tuberculosis in its progress are the following: In a vast majority of cases the deposit takes place at or near the apex of the lung; beginning on one side before the other lung is attacked; but the opposite lung is subsequently affected in a vast majority of cases. In the far greater proportion of fatal cases it is found that both lungs have been affected, but the deposit is most extensive on the side first involved.

Precursory Phenomena.—The positive appearance of tubercle in the lungs is preceded by a period of ill health, frequently well marked, and capable of being easily recognized. The constitutional cachexia manifests itself before its most dreaded consequences have become apparent. Louis asserts that "tuberculization commences from six months to two years before its announcement by cough or any obvious pectoral symptoms." Dr. Hogg thus sums up the symptoms of this stage: "Emaciation, susceptibility to bronchical catarrh, mental lassitude, failing of bodily strength, shortness of breath, weakness of sight, falling off of the hair, frequent perspirations, occasional palpitations or unsatisfactory state of the digestive organs and the alimentary canal."^{*}

The incipient stage of consumption is thus characterized: "a slow but marked diminution of bodily vigor for which no good reason can be assigned, compels the individual to abandon many of his accustomed pursuits; the spirits, nevertheless, are good, and not only is the idea of consumption never entertained, but any allusion to it is at once ridiculed. So general indeed is this hopeful condition—this almost instinctive blindness to the real cause of distress—that in their absence, however suspicious certain symptoms appear, these may, with much probability of accuracy, be pronounced unconnected with phthisis. In phthisis, when fully established, the features are somewhat sharpened; the movements of the body are hurried and anxious; the mental condition is irritable and capricious, whilst every act betrays an effort—sometimes instinctive, and at other times voluntary—to conceal the presence of disease. (Dr. Cotton.)—The appetite is uncertain; and there are frequent indications of imperfect digestion as well as tendency to passive diarrhoea and headache. The pulse varies in different cases, but is generally small, and easily excited. The sleep is restless, unrefreshing, and occasionally attended by perspirations. Loss of weight is of invariable occurrence; sometimes the decrease is so rapid that it will attract the attention of the friends; at other times the patient

* Practical Observations on Prevention of Consumption. P. 42.

needs to be weighed at considerable intervals to detect it." In a few instances the emaciation has been so rapid that several pounds have been lost within a few days. It is when a number of the above symptoms are found together, when "the patient's antecedents, his occupations and habits of life, or any other circumstances, seem to be conducive to phthisis," that the physician is reluctantly compelled to regard the sum total of the evidence presented to his mind as conclusive that consumption is becoming positively established.

Females are more subject to consumption than males,* and their education, habits of life, their absurd modes of dress and the requirements of civilized society are well calculated to excite this disease. In New-York the proportion of deaths from consumption was:

For the year 1860.—Whole No. of Deaths 22,710.	From Phthisis 3,186.
" " " 1861.— " " " 22,117.	" " 3,025.
" " " 1862— " " " 21,214.	" " 3,170.
Of these, in 1860, Males 1,627.—Females 1,559.	
" " in 1861, " 1,576.— " 1,449.	

But no general conclusions can be drawn from these statistics, as of 3,025 of the above deaths from phthisis, only 950 occurred in persons born in the United States.

Symptoms that precede the Formation of Tuberclæ.—Shorter breathing, less breath motion, feeble and shorter inspiratory sounds and particularly the vesicular more or less general over both lungs. Expiration is quick, forcible, and perfect; deep inspiration, though possible, is not effected until the attention of the patient is directed to it; and commonly after repeated trials, the air is diminished in ordinary breathing.

General atonic Condition of the Body.—Sense of weakness and languor, loss of flesh, and weight; loss of physical strength; pulse and respiration increased in frequency; complexion denoting mal-nutrition; irritability of the mucous surfaces; the chest is flattened in original conformation, or becomes so during the progress of the disease; the features from being round and placid acquire a sharp and faded look, especially in the morning, when the eye lacks expression; there is dullness of sound on percussion; cough and hæmoptysis exist in some cases though not in all; bowels constipated or unnaturally relaxed; the urine deposits lithates; and nervous and dyspeptic symptoms appear.†

"The existence of tubercles can not always be positively determined by physical examination, as they may be so minute or so partially clustered as not materially to interfere with vesicular respiration." "But," says Scudamore, "if a patient have lost strength and flesh without apparent cause, have recently become short-breathed on slight

* See Reports by Louis, Forbes, Skoda, Laennec, Andral, Clark, Young, &c.

† Dr. Smith.—Brompton Hospital for Consumption.

exertion, especially on making a slight ascent; if there be more or less dry cough, quick pulse, night-restlessness and perhaps some dullness on percussion here and there in the upper parts of the chest, we have reason to fear that tubercles are formed. If others of the family have died of the same disease the suspicion is painfully increased." As the disease progresses there is a slight increase of arterial action, the pulse ranging from 80 to 90, increasing towards evening, and being, also, small and quick; the equilibrium, too, of the circulation is disturbed, causing coldness of the hands and feet, and in the case of young females this unequal distribution of the blood often occasions irregularity, diminution, or even total suppression of the menses, as if nature made an effort to economize "the blood," being conscious of its vast importance.*

The patient in whom this disease is insidiously fixing its grasp, breathes when in repose more frequently than in full health; the expirations and inspirations are unequal in point of time; and he is put out of breath by the slightest exercise; his chest is neither large, full, nor well developed; its movements are unnatural during inspiration or expiration; there is tightness or pain in the thorax; he inherits a psoric or scrofulous constitution; he has cough from the slightest exposure, especially in the morning; his chest is inclined to become contracted, hence he stoops when sitting or walking.

Amongst the first signs which should lead us to suspect latent phthisis, are, an ill-formed thorax, respirations above the natural standard, and greatly accelerated on slight exercise, and the existence of a hereditary taint. Whenever these signs obtain, the chest should be at once explored by auscultation and percussion, so that if tubercles are discovered, immediate measures may be taken to keep back or prevent their development. Sometimes a slight dry cough, with tightness and pains in the lungs, are the first symptoms which announce the affection; at other times the disease supervenes suddenly, after a pleurisy or an influenza, or some other acute malady. In the majority of instances, however, the symptoms occur in the order enumerated, viz. habitual shortness of breath, especially after exertion, short and dry cough, burning in the palms of the hands and soles of the feet, constriction and pains in the chest on inspiration, sensitiveness of the lungs to cold. These symptoms may remain stationary for months or years, when from some exciting cause the pulse becomes unnaturally frequent, there are febrile exacerbations in the evening, and generally about noon, the respiration becomes more rapid and laborious, being often executed by the diaphragm; the anterior and lateral parts of the chest dilate unequally during inspiration and expiration, particularly in the recumbent posture; the catamenia in female subjects cease, a mucous

* Scudamore on Phthisis.

expectoration occurs; profuse night sweats and diarrhoea set in: the body wastes away; the expectoration becomes gradually more purulent and abundant; the body is bent forward; as the tubercles soften, the gurgling or rattle of the matter may be heard either with the naked ear or through the stethoscope; the cough is cavernous; the respiration and rattle also become cavernous, and pectoriloquism is heard as soon as the softened tuberculous matter is thrown off, and the cavity becomes empty; the sound on percussion still continues dull, but now and then a peculiar metallic sound is evident. As the disease progresses towards the last stage, and the cavities acquire a large size, the respiration, voice and cough give forth the peculiar hollow, metallic sound or buzzing, termed amphoric resonance. The whole body now presents the appearance of extreme emaciation, the face is pale, cadaverous, and frequently tinged with a waxen or lemon hue, the lips and roots of the nails are bluish, the nose pointed, the voice becomes hoarse, the mouth and throat aphthous, the feet œdematos; occasional delirium at night; and there is a continual failing of the powers of life until death ensues.

After the development of tubercles the same symptoms continue, and to them are added evidence of obstruction in certain localities; this condition is manifested by the wavy or jerking respiration, or prolonged expiration; there is less clearness of sound on percussion, showing obstruction and solidification. The lessened vital capacity (say 100 cubic inches at the earliest moment of recognized tubercle) is far greater than the tubercle yet deposited (in the earliest moment we could recognize it) could cause by displacement of air. The alæ nasi become slightly dilated; and the mouth takes a peculiar drawn expression, readily recognized. The predisposition to tubercle may exist for years, perhaps even from birth; but in many cases it is of short duration, the disease being originated by many causes in healthy persons. The circulation becomes accelerated towards evening, when the eye acquires an unnatural degree of brilliancy; and the constituents of the blood, which in health administer to the support and growth of the body, are converted into a morbid material.

Respiratory Sounds.—In the earliest stages they are more feeble than in health, for an uncertain period before flattening of the chest occurs. The respiratory sounds in health are limited to the bronchia and to the air vesicles. The bronchial sounds in health are only heard over the large bronchia; in disease they are heard over their smallest ramifications. The vesicular sounds are heard wherever there are air vesicles in action; they are feeble when the vesicular action is feeble; and they must be in some degree feeble to permit the bronchial sounds to be heard. Lessened vesicular action is evidence of lessened movement of the lungs. Lessened chemical and physical change in respiration, after the flattening of the chest is added, vesicular respiration,

bronchial or harsh respiration, with flattening of the chest, all exist before tubercle is deposited.

PHYSICAL SIGNS.—Percussion.—Tubercular deposit occasions diminution of normal vesicular resonance, as soon as the disease begins to manifest its existence by other symptoms. The existence of small disseminated collections of tubercle is revealed by "simple dullness, slight or moderate in degree, and more or less extensive, at the summit on one side, compared with the resonance on the other side. To determine the fact of slight or moderate relative dullness, percussion is to be practiced on both sides alternately, at corresponding points. Observe the symmetrical conformation of the two sides of the chest. If there be spinal curvature, natural defect of form, remains of preceding pleurisy which disturb the symmetry, the value of percussion is destroyed. In well-formed persons in good health, the region of the apex of the left lung, below the clavicle, gives a more sonorous sound, more vesicular and of lower pitch than on the right side. If then we find distinct dullness at this point on the left, it is more significant than it would be on the right side.

All physical explorations of the chest require not only a natural good perception of sounds, but also that it be *cultivated*. A good musical ear will detect a variation in the pitch of the sound which another person would not perceive.

DIAGNOSIS.—One of the first symptoms which announces the approach of phthisis, is an *undue shortness of breath* after exercise. If, in addition to this, there are haemoptysis, wandering pains, constriction and tightness at the chest, great sensitiveness of the lungs to cold air, a dry morning cough, a dull sound in the clavicular region on percussion, and a partial or total absence of the respiratory murmur, the most serious apprehensions may be entertained.

Let all remember, also, that it is only at this early stage of the malady, that our preventive and remedial measures can be brought to bear with any assurance of success, and on this account we shall dwell particularly upon these primary indications, trusting that we may in this way impress upon the minds of all their vital importance.

In all of our investigations of diseases of the chest, it is a matter of importance in the first instance, to ascertain whether any hereditary predisposition exists on the part of the patient to tuberculous affections, secondly, whether from occupation, previous habits, excesses, protracted mental anxiety and depression, and frequent exposure, without a supply of wholesome, nutritious food, the patient has not acquired those peculiarities of constitution which render him susceptible to attacks of phthisis; and thirdly, whether the physical development of the chest is such that the lungs can have ample room to exercise their functions.

In making up our diagnosis in the early stage of any given case,

much will depend upon the presence or absence of these remote causes, for most of the symptoms enumerated may exist in a man with a large and well-formed chest, and with no hereditary or acquired predisposition to the malady, and yet excite no serious apprehensions, while the same symptoms in an individual with a narrow, flat, and ill-shaped thorax, with a predisposition to the disease, would induce us to form a diagnosis of an entirely different character. Commencing then, with the primitive symptoms of consumption, we shall notice first:—

The Respiration. — “Healthy respiration,” according to Marshall Hall, “is performed with ease and freedom, and without the aid of the auxiliary muscles, in any of the usual positions of the body. It is effected by a nearly equal elevation of the ribs, and depression of the diaphragm, except in females, in whom the thorax is observed to move more than in men; each side of the thorax moves also in an equal degree, and inspiration and expiration occupy nearly equal spaces of time.”

Laennec considers the respiration natural “when the anterior and lateral parts of the chest dilate equally, distinctly, yet moderately, during inspiration, and when the number of inspirations in a state of repose is from *twelve* to *fifteen* in the minute.”

Andral puts the mean average of respirations in a healthy adult, at more than sixteen or eighteen in the minute, Magendie at twenty, and some writers even as high as twenty-six.

Taking then the mean number of respirations of a healthy adult to be eighteen per minute, and bearing in mind the natural movements of the healthy thorax during inspiration and expiration, we shall be enabled to form a pretty satisfactory opinion respecting the condition of the respiratory organs, by judicious comparisons of different stages of disease with the supposed natural standard.

We are convinced from much observation, that Laennec, Andral and Louis, have laid quite too little stress upon this important indication; for, although individuals may now and then be short-breathed who have no tendency towards diseases of the lungs, yet, when taken in conjunction with a hereditary predisposition, unusual susceptibility of the lungs to cold, slight, dry hacking cough, narrow, or flat chest, or occasional wandering pains in the chest, we may be certain that mischief is threatened.

A very fleshy person, or one afflicted with disease of the heart, and certain other maladies may be short-breathed after slight exercise; but these cases can never be mistaken by the observing physician as phthisical, since the history of the case, as well as the general aspect of the patient, sufficiently mark the distinction in all instances.

Whenever, therefore, an individual has more than the usual number of respirations during repose, the expirations and inspirations being

unequal in point of time, and he is put out of breath upon the slightest exercise, it is the duty of the physician to ascertain the cause of this unsound action, and whether consumption is not insidiously approaching. Is his chest large, full, and, well developed,—are its movements natural during inspiration and expiration,—is scrofula hereditary in his family,—is he troubled with tightness or pains in the thorax,—is he subject to cough upon the slightest exposure,—is he inclined to stoop when sitting or walking,—is his respiration sighing,—has he a slight morning cough,—finally, is the sound in the clavicular region, or in any other part of the chest, dull on percussion, and is the natural respiratory murmur absent at this, or any other point? Upon the presence or absence of these symptoms will depend our diagnosis. Taken as a whole, they indicate clearly the existence of phthisis pulmonalis; and where there is a family tendency to phthisis, even dull sound on percussion, and absence of the respiratory murmurs, with dyspnoea after ascending the stairs, or other moderate exercise, will warrant the opinion that tubercles exist in the lungs. If, furthermore, one or more of the other signs enumerated obtain, our opinion must be still more decided and unfavorable.

Auscultation.—The more important diagnostic criteria are the modified respiratory sounds. If the respiratory sounds are free from any abnormal modification tuberculous deposit can hardly exist. When small, disseminated tuberculous deposits exist they produce the modified respiratory sounds designated as broncho-vesicular respiration. It embraces all the elements of bronchial respiration, except that the inspiratory sound is not wholly tubular, but presents the tubular and vesicular qualities combined, called by some authors "*rude*, by others *harsh* and *dry* respiration. If all the characters of the broncho-vesicular respiration are present, we shall have an inspiratory sound, neither purely tubular nor vesicular in quality, but a mixture of both (broncho-vesicular), the duration somewhat shortened (unfinished), the pitch raised; a brief interval, followed by an expiratory sound, prolonged, frequently longer and more intense than the inspiration, and higher in pitch. In making all explorations, auscultation as well as percussion is to be practiced at the summit of the chest on both sides, and the phenomena carefully compared.

Broncho-vesicular respiration, in conjunction with other signs and with symptoms, is diagnostic of a tuberculous deposit not producing complete solidification, extending over a considerable space, at or near the apex of the lung. A skillful auscultator will nearly always be able to detect this condition when it exists. It must be remembered that on the right side in front at the summit the inspiratory sound is frequently less intense, less vesicular, and higher in pitch, than on the left side, and that a prolonged expiration on the right side, occasion-

ally more intense and higher in pitch than the inspiratory sound, and sometimes existing alone, is observed in healthy persons. Thus the broncho-vesicular respiration indicates, more clearly, tubercular deposit, if heard at the apex of the left than at that part of the right lung.

Broncho-vesicular respiration continues limited to one side of the chest, even when tubercles exist in both, until the deposit of tuberculous matter becomes abundant; it is observed that the "pitch and vesicular quality of the inspiration, the relative intensity, duration and pitch of the expiration" are nearly or quite normal in the lung least affected. This is accounted for by supposing that "when the increased density at the summit of one lung is sufficient to occasion a distinct modification of the respiratory sound, the activity of the other lung is sufficiently increased for the normal character to be maintained, notwithstanding the presence of a certain number of tubercles, without giving rise necessarily to a well-marked exaggerated respiration, "though this does occur in, comparatively," few cases.

Dr. Flint gives the following "*Summary of the Physical Signs belonging to Pulmonary Tuberculosis:*"

"Diminished vesicular resonance on percussion at the summit of the chest, varying in degree from slight dullness to a near approach to flatness; present on one or on both sides, but in the latter case more marked on one side; the dullness, in general, proportionate to the abundance of the tuberculous deposit; increased sonorousness occasionally observed at the summit of the left side, due to transmitted gastric resonance, the sound tympanitic in quality and high in pitch; the vesicular frequently replaced by a tympanitic sound on either side, when the sonorousness is not increased, constituting tympanitic dullness.

"An increased sense of resistance in proportion to the amount of crude tubercle. A tympanitic resonance over a circumscribed space at the summit, present and absent at different examinations, in some cases presenting an amphoric and the cracked-metal intonation, constituting the evidence afforded by percussion of the existence and situation of tuberculous excavations.

"On auscultation, the broncho-vesicular and the bronchial respiration, the latter denoting tuberculous solidification. Frequently, with these modifications, diminished intensity of the respiratory sounds; occasionally suppression of all respiratory sound; interrupted; or jerking respiration. Exaggerated vesicular murmur on the side, either healthy or least affected; the crepitant, sub-crepitant, sibilant, or sonorous, mucous, and crackling, or crumpling rales, occurring as contingent signs, their significance dependent on their being found within a circumscribed area at the summit of the chest; abnormal transmission of

the heart-sounds, especially at the right summit; increased vocal resonance when situated on the left side at the summit; an acute and more or less intense *souffle*, or bellow's sound, accompanying whispered words, especially if present on the left side; broncophony, and occasionally transmission of speech, complete or incomplete, over-tuberculous solidification, a friction sound, limited to the summit or the chest.

"The cavernous respiration, occasionally observed, alternating with suppression or gurgling, occasionally amphoric, and very infrequently, pectoriloquy, constituting the evidence, afforded by auscultating the respiration, of the existence of and situation of the excavations; the characters of the cavernous and bronchial modifications of the respiration, sometimes combined (broncho-cavernous respiration); splashing, an impulse, seen and felt, existing within a circumscribed space at the summit—signs of cavities furnished by the act of coughing; occasionally, when the cavity is very large, metallic tinkling.

"By inspection, flattening, or depression, at the summit, either confined to one side, or more marked on one side than on the other; the clavicle generally more prominent, but occasionally receding with the ribs; diminished expansibility with the act of inspiration; the range of motion found to be lessened, as well as size of the chest at the summit, by mensuration.

"Disparity at the summit of the chest in vocal fremitus, provided it be found to be greater on the left side.

A splashing succussion-sound in some cases a very large excavation."—(*Diseases of the Respiratory Organs*, p. 501.)

Dr. Mac Limont claims that simultaneous *percussion* and *auscultation* can be employed with great benefit, and that the *double stethoscope* of Dr. Cammann (which permits the auscultator to face the patient) removes all the obstacles to the *combined* use of these two means of investigation at the same time. "The advantage of this is very great, the sound elicited by percussion is thus intensified to an extraordinary degree, and conveyed to *both* ears with a distinctness very different from the vibrations that reach the auditory nerve in the usual way, *i. e.* through the medium of the atmosphere." "By this method, far better than any other, we may discover that earliest indication of organic lesion in phthisis, a certain *obscurity* of sound arising from a condensed pulmonary parenchyma; but no less satisfactory is it as a means of establishing a *differential diagnosis* in those cases in which we are sometimes at a loss to distinguish whether the dull sound is due to effusion or to induration of the pulmonary tissue; as also in cases of *cavities*, in which it may be desirable to ascertain whether they contain air or liquids, or both: if air only, then auscultatory percussion yields a far clearer sound than can possibly be got by the ordinary

method; but if, as is most commonly the case in large cavities, air and fluids co-exist, then by this means the hydro-aëric sound may be heard very distinctly; while for recognizing that valuable evidence of a pulmonary vomica, the "*bruit de post fele*," there is no means so accurate as the one I am now recommending. As a mode too of ascertaining the exact size and form of some of the internal organs, the liver, kidneys, heart, spleen, ovarian cyst, fibrous tumors of the uterus, &c., auscultatory percussion promises to be of signal service.* "When the object is to ascertain the size or condition of an organ far removed from the surface, and where the impulse has to be communicated through an external covering of some thickness—as in percussing the abdominal organs," then the solid cylinder of cedar, as used by Dr. Cammann, or the pleximetre, should be preferred to the double stethoscope.

Progress of Phthisis in its later Stages.—When the disease has advanced to the stage in which the febrile exacerbations, and the rapid respirations, the profuse night-sweats, the mucous expectoration and exhausting diarrhoea show the inevitable termination of the patient's sufferings not far distant; he knows himself to be failing from week to week; but still he daily describes his condition as being "better." In females menstruation has already ceased and emaciation progresses. "As the tubercles soften, the gurgling or rattle of the matter found may be heard with or without the stethoscope. The cough is cavernous; the respiration and rattle also become cavernous; pectoriloquism is heard as soon as the softened tuberculous matter is thrown off, and the cavity becomes empty: the sound on percussion still continues dull; but now and then a peculiar metallic sound is evident. As the disease advances towards the last stage, and the cavities acquire a large size, the respiration, voice and cough give forth the peculiar hollow metallic sound or buzzing termed amphoric resonance. The whole body now presents the appearance of extreme emaciation; the face is pale, cadaverous, and frequently tinged with a waxen or lemon hue; the lips and roots of the nails are bluish, the nose pointed, the voice becomes hoarse, the mouth and throat aphthous; the feet œdematos; there is occasional delirium at night; and continual failing of the powers of life until death ensues.

M. Beau, of La Charité, mentions in addition to the premonitory headache, a more reliable symptom, which he says is very constantly found: a peculiar "pain felt on pressure in the popliteal region, or on the thigh a little above the knee."

SECOND STAGE.—Signs of the existence of Tuberclæ.—Obstructed breathing; wavy or jerking inspiration, and prolonged expiration, in-

* British Journal of Homœop. July, 1864, p. 432

creasing locally as the accumulation increases. The obstruction required to produce these signs must be partial and lateral, as opposed to complete and terminal: that is, it must occur in the course of the airway and leave a portion of the conduit open, so that the air may be forced beyond it.

After an uncertain period there will be further moist sounds, indicative of air passing through fluid which is then softened tubercle. The softening of the tubercle is not a corroding process like that of ulceration, but is simply the imbibition by endesmosis of fluid by which the tubercular mass softens; it obtains the fluid by which it is softened from the walls of its cell. The process may be non-inflammatory; but exode of pus corpuscles always occurs at some period, and that is presumed to be the result of inflammatory action. The reason for the destruction of the tissue is not simply the softening of the tubercle, nor any inflammatory or ulcerative action; but the basement membrane and capillaries, having ceased to act for a time, lose their vitality, and are ready to decay, and they only wait for a partial emptying of their contents in order to break down. Destruction of the tissue is indicated by moist, fine, crepitant rales in the tubercular mass. The softening of the tubercle and the destruction of the cell-walls having begun, it only remains that those processes shall go on until all the tubercles have been eliminated, and a cavity results; and the whole are but steps to one process, and in truth are one stage of the disease. With softening, the bronchia are reopened, and the air is admitted which produces the moist sounds, and ultimately all the signs which are indicative of a cavity; but, with the restoration of respiration, there is no increase of respiratory changes, since the air-cells in that part are destroyed, or perhaps removed. With the formation of a cavity the lung falls in, as do also the parts of the chest immediately covering it, and the dull sound on percussion will in part have disappeared.

Thus the essential signs of the three stages of consumption are:*

1. Lessened action; — 2. Obstructed action; — 3. Destroyed lung.

In proportion as structural disorganization progresses in the disease there is reaction or compensatory effort set up by nature, by which one part of the lung is made to do a double share of duty when another part becomes incapable of performing its function; and the entire system quietly accommodates itself to the newly-induced condition.

Conditions of the Throat in Phthisis.—1. There is a state of pallor without injection of the vessels and without desquamation or inflammatory action. It is common in the early stages, particularly in persons engaged in public speaking, and is shown by dryness and disposition to cough; sensation generally referred to the fauces, pharynx and upper

* Smith, Braithwaite's Retrospect, July, 1857, p. 67, &c.

saliva and pancreatic juice. These fluids are therefore incapable of "transforming the carbonaceous constituents of vegetable food into oil, or of so preparing fatty matter introduced into the system as will render them easily assimilable. In consequence, more albuminous than fatty matters enter the blood, and the accessory waste of structure is supplied by the absorption of the adipose tissue of the body,—hence the emaciation which characterizes the disease.* "The body is not nourished," says Dr. Paris. "The patient having, lived as long as one particle of fat remains that could be absorbed for his support, dies of atrophy." "In the meanwhile the lungs, not having so much carbon to excrete in the form of carbonic-acid, become especially liable to local congestions, leading to exudations of an albuminous kind which is tubercle."*

Pulmonary Symptoms.—As emaciation progresses and strength declines, cough makes its appearance; with increased breathlessness hæmoptysis occurs; pains in the chest; nocturnal perspirations; dyspeptic symptoms become more troublesome; percussion denotes consolidation of some portions of the lung, in a vast majority of cases at the apex; auscultation now proves that at this part air is but feebly and with difficulty permeating its structure. During the second stage, the stethoscope gives evidence of the softening of the tubercular masses; during the third and last, the presence of a cavity is, by the same means, rendered manifest. The general symptoms are those of the first stage, only in much greater intensity. The cough becomes attended with expectoration, varying alike in its quality and degree. As the disease advances the pulse rises, emaciation becomes extreme, and all the symptoms point to a rapidly fatal termination. (*Dr. Pope, Brit. Journ. Hom.*, Jan. 1862, p. 19.)

Urinary Secretion.—The urine in phthisis and in all lesions of the nervous centres is deficient in urea. There is therefore an equivalent excess of this constituent in the blood, as in Bright's disease. (*Reynoso.*)

Functions of the Skin.—These become impaired, and the skin becomes pale as well as moist and clammy, while the inability to take a proper amount of active exercise has a tendency to produce engorgement of most of the internal viscera, and consequent disturbance of their functions; while the non-elaboration of healthy blood produces badly assimilated chyle, "which is supposed to favor the formation of tubercle, which is deposited in the lungs or other organs. When the lungs present the point of attraction and become the probable seat for tuberculous deposition, the patient begins to be specially subject to colds, catarrhal attacks, after the least exposure. In these catarrhal affections originate that obstinate bronchitis which so generally precedes or accompanies phthisis."

* *Bennet.—Gelston.*

Incompatible Diseases.—M. Beau, of La Charité, in a recent lecture speaks of the rare occurrence of phthisis in hysterical subjects. The same immunity from phthisis has been observed in persons suffering from asthma and emphysema of the lungs. This immunity is not universal.

Tubercle causes increased density in the lung in which it is deposited. The first deposits, called miliary tubercles, are in the form of small isolated patches separated from each other by intervening parenchyma in a healthy state. The density of these morbid patches may be but slight; but the obstruction of the air from their pressure on the small bronchial tubes, abridging the respiratory processes on the parts affected, causing collapse of the cells not filled with tuberculous matter, increases still further the density. When the deposits enlarge, by constant accretion they form more solid continuous masses called tuberculous solidifications. When the tubercular accretions are small and the intervening parenchyma becomes solidified by inflammatory exudation, the physical signs are the same, showing solidification; and the crepitant rale will prove pneumonitis, which under the attendant circumstances will be evidence of tubercle. In the progress of softening, ulceration and evacuation of the liquefied tuberculous matter is liable to be attended with symptoms of the deposition of fresh material in the surrounding parenchyma, which gives signs of solidification while crude tubercle is being deposited throughout the whole lung; the physical signs then vary as the excavations become larger in proportion to the solidified part.

Circumscribed bronchitis may be taken as evidence of tuberculosis; and the presence of fluid in the tubes, produced either by bronchitis, or derived from cavities in connection with the bronchia furnishes important indications. The lung as it solidifies by deposition of tubercle becomes less and less expansible: and the succession of attacks of circumscribed dry pleuritis over the points of the lung occupied by tubercle contribute to the establishment of the fact that tuberculosis is positively advancing.

PATHOLOGY.—The primary nature of phthisis is not understood, and widely different views of its pathology have been given by different authors. A late writer, Dr. Cotton, says: “It is a peculiar and obscure condition of the whole system, in which, instead of the healthy nutritive material required for the growth and reparation of the body, there is produced in the blood a morbid substance which sooner or later appears as *tubercle*, or *tuberculous matter* in the pulmonary structures.” This state of the system he regards as identical with that known as struma or scrofula:

“In consumption, as in many other maladies, we are permitted to recognize the disease only in its effects. It is evident that there must be *something* which constitutes the malady: but it would be vain to

search after it; it has no individuality; — it is a *process* which, like many others, is so subtle and far removed, even from our conceptions, that it seems destined to remain forever beyond our reach; we are allowed to do nothing more than study its laws, and, in some measure control its actions" (p. 2 and 3). We regard consumption, with a vast number of chronic diseases as a product of some latent dyscrasia, which, through generalized by Hahnemann under the generic name "psora," may present peculiarities in individual cases; but they can only be cured by constitutional remedies.

Dr. Epps defines phthisis to be a disease depending upon a cachexia differing in different cases, each case of phthisis having a "special cachexia," of its own. Dr. Hogg considers it as depending on "constitutional debility, on a want of power in the system, on an impaired state of the digestive" organs—in a word, "on a strumous diathesis." (p. 3.)

Dr. Bennett considers phthisis to consist of "a mal-nutrition arising from imperfect assimilation." Dr. Turnbull says he believes the condition which causes the development of tubercles to depend on "a state of imperfect nutrition; a condition in which the digestive organs are unable to manufacture from the food a perfect kind of blood, capable of nourishing every part, without allowing some imperfectly-formed particles to escape at the time."* This author elsewhere gives the opinion that "imperfect digestion, combined with deficient oxydation or a want of uniformity in the action of the oxygen on the blood, and through this fluid in the whole system, is the main cause."† Dr. Pope thus concludes: "Mal-nutrition of the tissues is undoubtedly one of its earliest features as it is one of its most fatal characteristics; but in order to the development of tubercle, the imperfect digestion producing it must occur while the constitution is under the influence of a cachexia peculiar in its nature, tending under certain circumstances to the production of tubercle. Dyspepsia, however severe and intractable, does not necessarily culminate in phthisis. (*Brit. Journ. Hom.* No. LXXIX, p. 18.)

Dr. Gregg, of Canandaigua, N. Y., regards the tuberculous deposit as "simply the result of a *perverted secretion of the mucous membranes*; and says this is equally true, whether such perversion has originated in the individual who is suffering, or whether he has inherited the predisposition or taint from his ancestry." He thinks his experience proves "that the great natural law discovered by Hahnemann, when "properly applied, is amply competent not only to stay and cure the disease in cases where it has not yet extensively broken down the structure of the lungs, but also, so to eradicate the tuberculous tendency as to cut off all transmission of this tendency by inheritance."

* An Inquiry how far Consumption is curable.

† Progress of Improvement in the Treatment of Consumption. By James Turnbull, London, 1853.

Development of Tubercle.—Tubercle, the proximate cause of phthisis, says Dr. Mac Limont,* is “a material formed and deposited from the blood, and the condition of this fluid most conducive to its production consists in an excess of fibrin and a diminution of the red globules.” But every person in this condition is not in a state of incubative tuberculosis; for “in addition to all this and much more, there is required for the production and deposit of tubercle, a remote cause—a diathesis—hereditary and not acquired”—the deposit of tubercle is the result of *depraved innervation*, and that the main chance of benefiting the patient consists in the early discovery of the symptoms,” and bringing to bear upon them all the curative influences within our power.

The appearance of the tuberculous formations vary in different subjects, some being small as millet-seeds and irregular in shape, either distinct, or running into each other, of the consistence of cheese, and of a light yellowish color. This variety, which is by far the most common, has been termed the *miliary tubercle*.

Another variety is called the *granular tubercle*, which according to Laennec, is only the ordinary tubercle in its first stage. Bayle believed the miliary granulations to be distinct from tubercles, while Mackintosh supposed them to be genuine tubercles, but *sui generis*.

Bayle, Laennec, and others, also assert that they have met with a few cases which they term *encysted tubercle*. Other writers speak of the occasional occurrence of this variety of tubercle, it being semi-transparent, whitish, and in consistence like hard cheese.

Laennec describes, likewise three kinds of *tuberculous infiltration*, viz: the *irregular*, the *gray*, and the *yellow*. This infiltration is generally formed around tuberculous excavations, but it may exist where there are no tubercles. It is something found in large masses,” occupying the whole lobe of the lung, and having no connection with the miliary tubercle.” (Mackintosh.)

Respecting the nature of these tuberculous formations, there is a wide difference of opinion. Broussais supposed that “*irritation*, or *inflammation*, were only degrees of the same affection, and that they may produce, indifferently, tubercles, encephaloid cancer, melanosis, fibrous, bony, cartilaginous growths, &c.”

Laennec and Andral maintain that they are “*accidental productions*, foreign to the natural organization of the lungs,” and caused by an aberration in the nutrition of the organ. Others are of opinion that tubercles are primitively hydatids.

In the first stage of development tuberculous matter is “a gray,

* Brit. Journ. Homoeop., No. 77, p. 429.

tory of the development of individual parts as we do in that of entire organisms. Just as little as we can now admit that a *tenia* can arise out of saburral mucus, or that out of the residue of the decomposition of animal or vegetable matter an infusorial animalcule, a fungus or an alga, can be formed; equally little are we disposed to concede, either in physiological or pathological histology, that a new cell can build itself up out of any non-cellular substance. Where a cell arises, there a cell must have previously existed (*omnis cellula e cellula*), just as an animal can spring only from an animal—a plant only from a plant."

Anatomical Character of Tubercle.—Rokitansky showed that tubercles originally occur in the lungs in two forms: 1. "The interstitial tubercular granulation, round grayish bodies found discrete or collected into heaps: their seat is the interstitial tissue between the smaller lobuli and the cells of the lungs and on the walls of the cells themselves. This is the most common form of deposition.—2. Tuberculous infiltration. This consists in a deposition in the pulmonary cells, as a result of the process identical with common pneumonia, except that the lymph deposited in the cells, instead of being resolved or running into pus, becomes, from the influence of tubercular diathesis, the yellow tuberculous matter, thus constituting hepatization by means of a tuberculous deposit. This form is always the result of a high degree of the peculiar tubercular diathesis." (Dr. Gelston, *Brit. Med. Jour.* Oct. 1860, p. 603.)

Microscopical Structure.—Tubercular matter "consists of corpuscles which are characteristic of tubercle," and of granules and minute molecules. The corpuscles have no nuclei, and are considered to be undeveloped cells, which approach more or less nearly to the exudation or plastic cells of healthy inflammatory deposits. The miliary tubercle has some appearance of cells and fibres, but the crude yellow tubercle has no appearance of organization, and during softening the corpuscles swell, burst and discharge granules."

Chemical Character of Tubercle.—"The formula of tubercle according to Simon, is: C 43 H 35 N 6. O 14, Caseine: Prot. 10 S. 1."* The organic component parts of tubercle, as given by Vogel, Cerutti and others, are: caseine, with some fat and a little albumen. Others have found albumen, gelatine, and fibrine, cholesterine, &c., showing that the composition is not always precisely the same. It is supposed by Fletcher and others to be "an organized mass."

"Tubercle," according to Simon, Anel and Rokitansky, consists in a misdevelopment of the protein ingredients of the lymph and blood, the essence of which lies in the solidification of something which

* Dr. Gelston. *Brit. Jour. Homœopathy.* Oct. 1, 1860, pp. 598, 599.

should remain fluid : this is due to the proteine ingredient precipitated in combination with oxygen. Hence most likely to take place in the glands where lymph is brought into combination with arterial blood, and in the lungs where it meets with the oxygen of the air, it may arrive any where when chemical reaction occurs with a nutritive blastema. In accordance with this, all the great leaders of modern pathology agree on the formula that 'venosity of the blood excludes tubercle.'* It also explains the beneficial effects of dietetic measures, cod-liver oil, spirituous liquids, and the "carbonaceous atmosphere of swamps in arresting or retarding tubercular development."

Tuberculous blood is "defective in vital qualities ; the red globules are deficient in number and defective in structure ; the globulin, haemetin, and iron are all deficient. The serum of the blood is vitiated in quality : the water, albumen and lime in excess." The albumen may be defective in a tendency to be converted into casein, which does not exist in the blood in its native state. The fibrine is deficient in quantity and imperfect in quality ; also the fats, alkaline and earthy salts, especially the chlorides and phosphites of potassa and soda. The quantity of albumen in proportion to other ingredients in the blood has been remarked to be more nearly uniform than that of any other principle, being about 70 or 80 parts in 1000. "It would seem," says Gairdner, "as if nature had found it necessary to have at hand something like an unvarying stock of the raw material out of which all the other principles of the blood might be fashioned, according to the varying states and requirements of the organism. One particularly interesting point in connection with this view is found in the fact that, relatively, the albumen and the blood globules appear to alternate with one another in their several proportions—"if the globules fall off in amount, the albumen is increased ; and *vice versa*, when the globules abound, the albumen is diminished."

Causes of Phthisis.—The causes of consumption may be divided into: first, the *constitutional*; second, the *accidental*; third, the *exciting*.

1. Under the first head may be included, first hereditary scrofulous taint; second, hereditary impurities of the blood of a syphilitic, erysipelatous or psoric character; third, imperfect organization of the thorax, feeble constitution; and fourth, a melancholic nervous temperament.

The principal causes which induce consumption, are : hereditary transmission from parents who have themselves inherited the disease, or who, originated it in their offspring by becoming enfeebled.

2. The most prominent *accidental causes*, are, confinement in close

* N. Am. Jour. Homosop. May, 1857.

crowded, and ill-ventilated apartments, protracted mental depression, insufficient nourishment, unwholesome food, intemperance, damp and unprotected habitations, masturbation, the habit of stooping, and thus contracting the capacity of the chest, light clothing, late hours, over-excitement, abuse of drugs, especially mercury and opium, want of exercise and abuse of tobacco, neglect of proper clothing and cleanliness; excessive labor;" mental depression, anxiety and care, which exhaust the nervous force; too early marriage or excessive sexual indulgence, which lays the foundation of premature decay in parents, and scrofula in children. Fonteret* says: "If the exhaustion consequent on debauchery is not always a cause of sudden death, it is infallibly attended with the loss of strength necessary to labor, and develops a peculiar aptitude to certain diseases. How many affections of the spinal cord, how many forms of paralysis, of disease of the chest, cancers of the cervix uteri, &c., arise from vicious indulgence?" The children born under "concubinage are few in number," are "puny, scrofulous, and are liable to a mortality greater by one-half than legitimate children." A large proportion of the cases of consumption seen among young men arise from the vice of masturbation. A higher and purer physical and spiritual education than boys or young men now anywhere receive is one of the most imperious demands of this progressive age.

3. *Exciting Causes.*—Those which determine the local deposition of tuberculous matter after constitutional predisposition is established are: confinement in early life to close, crowded, ill-ventilated residences, factories, work-shops, or school-rooms; deficient or improper diet; irregularities of various kinds; over-taxing the mental and physical powers of children in schools. Experiments on rabbits prove that insufficient nourishment, damp air and the exclusion of light favor the development of tubercular deposits.

Certain kinds of food favor the development of scrofula, of these pork is the worst that is in general use.

Leavened bread, whether made light by yeast or any other process, which requires the dough to stand and sour before baking, aids in developing scrofula, dyspepsia and a long train of nervous diseases.

4. The *exciting causes* are: atmospheric vicissitudes suppression of the perspiration by cold, imperfectly subdued acute diseases of the pulmonary organs, repelled cutaneous eruptions, inhalation of irritating vapors, &c., external injuries. Of these proximate causes, cold is considered by most authors as by far the most common and dangerous.

* Consumption, its Nature, Prevention and Homoeopathic Treatment. By Wm. Hitchman, M.D., F.L.S. Phila. 1859.

Hygiene physique et morale, &c., of Workmen in Large Towns, &c. By A. L. Fonteret.

It is probable, however, that cold of itself is by no means so injurious as has been generally supposed, but that the sudden alternations from heat to cold which obtain in the temperate latitudes, exert far more influence in engendering phthisis, than the severe but steady cold of more northern regions. Indeed, some recent writers have strongly recommended a change from temperate to cold latitudes, as far more advantageous to consumptive subjects than a warm climate. In this opinion we do not coincide, since the highly condensed air of the former must act as a constant and powerful stimulus to the already irritable tubercles. We much prefer a warm, mild, and equable climate in these cases.

Phthisis is promoted among females by the erroneous education and habits of life of the women of the civilized countries. Born and reared during infancy in hot-houses, where the invigorating breath of heaven rarely penetrates; their childish intellects crammed with ideas which they are unable to understand, while their physical frames are permitted to wither in the crowded school-room, without that free and abundant exercise and indulgence in childish sports, which are so absolutely essential to their growth and well-being; submitted at the period of puberty to those instruments of torture and distortion, stays, in order that the symmetrical figures which God in his wisdom has given them, may be contracted sufficiently to meet the ideas of an abominable *fashion*; rejecting constant and vigorous exercise in the open air, early hours, regular habits, and all those means which tend to promote physical strength and vigor: is it strange, in view of these things, that the seeds of phthisis are so often and so early planted? There are habits also prevalent among the youth of the male sex, which conduce in an alarming degree to generate and develop physical affections. The vice to which we allude, from false delicacy, from its solitary nature, and from the very gradual manner in which it impairs the nervous system and undermines the constitution, has either been entirely overlooked, or but slightly touched upon by writers. But unless we are much deceived, a very large number of consumptive cases, especially in young men, are attributable to masturbation as their remote cause; and we are sure that those who have minutely investigated the previous histories of consumptive patients, will fully coincide with us.

It is quite true that there are many other habits and customs which pertain to refined society that also have their effect in engendering phthisis, but we believe that the cause just touched upon has been productive of more evil amongst the youth of the male sex than any other causes combined. This cause applies to some slight extent to females, but, compared with the male sex, it is trivial and unimpor-

CHAPTER XX.

—The mind is ever less sensual and more spiritual than the majority of the other sex. — Let them talk as they may upon the subject, — it will not avail. Let them talk of the inevitable consequences, in health or disease, &c., to which an immoral life so surely leads.

—One of the causes which induces the development of tubercles, is a want of symmetry and proportion in the organization, or it may be acquired through slovenly living, a neglect to keep the body in that full, free, and vigorous state of development and well-being of the

body and ill-shaped, a suitable course of exercise adopted and persisted in until symmetry. This result is practicable by a due regard and energy on the part of the

—The best means to this desirable end, are, gymnastic and respiratory exercises, putting into action the muscles of the body, especially those of the body erect, in the open air, the habit of breathing deeply, in various positions, in order that all portions of the lungs may receive a portion of air, and thus execute their functions; the use of tubes for the purpose of exercising the respiratory organs. By a regular and systematic course of these exercises, the size of the chest may be increased, and the lungs made to acquire a degree of power which have been attained by no other

—Persons whose well-formed chests are contracted and deformed by wearing of tight clothing, stays, &c., and by habits of sitting with the body constantly inclined forward, — These pernicious habits are so commonly indulged in, and are so much a part of our social system, that we are almost entirely insensible to their baneful consequences upon the most important organs. — Yet no one who is at all aware of the dangerous and undermining effects of such habits, and of those whose pride, or indolence, or improvidence lead them to persist in such habits, we would say, and comfort them for their sufferings, "you have sown the wind and reaped the whirlwind."

— *Causes of Predisposition to Phthisis.* — An

alarming circumstance connected with the history of any individual, even when no symptoms point to an approaching consumption, is hereditary predisposition to tuberculous disease of the lungs. To know that the seeds of a dreadful malady are implanted in the system, liable at any moment to be roused into activity by the numerous exciting causes which prevail, is enough, one would naturally suppose, to call forth all the energies of the individual in order that he may escape the threatened evil;—yet how few under such circumstances use proper means of prevention, and exercise that care and attention towards themselves which these cases require!

But the root of the evil must be traced further back to those injudicious marriage connections, where one or both of the parties are laboring under a *scrofulous taint*. It appears singular that intelligent persons of this description should be willing to enter the matrimonial state when they are so certain of entailing upon their offspring disease, misery, and an early death; yet how often do we see the desire for temporary self-gratification, for riches, display, or pride, outweigh the potent reason named, and induce the unfortunate victim of the malady, to herself and her children into almost certain future suffering!

A predisposition to phthisical affections is often *acquired* by constant exposure in small, damp, and ill-ventilated habitations, insufficient clothing, scanty and unwholesome food, free use of pork, incessant occupation in close rooms and constrained positions, masturbation, protracted depression of spirits, and certain occupations, as those of the stone-cutter, scythe-grinder, &c.

All of these causes exert a powerful influence in bringing the system into that condition which renders it peculiarly susceptible to tuberculous formations in the lungs, and for this reason should be avoided as much as possible by individuals, and should receive the attention of all benevolent men.

CONTAGION.—Dr. R. Rogerson.* Phthisis is certainly not infectious through the atmosphere as small-pox or scarlet fever, but when the strong and vigorous come in contact with the phthisical breath, it must have some effect in giving rise to the disease. Sleeping in the same bed, breathing the same polluted atmosphere in the same bed-closet, and inhaling the very breath which the diseased lung is giving off, in fact the effluvia from the diseased lung coming in actual contact during inspiration with the healthy lung: and such a state of matters existing for weeks and months, must undoubtedly prove injurious and detrimental, and may be expected to leave some traces behind. The tubercular emanations coming in contact with the blood through the medium of the lungs, alter the chemical composition of the blood, and thus pre-

dispose to tubercular disease. The individual who has in this way been *predisposed* to consumption is more liable to have the pulmonary organs affected from other ordinary causes of disease. If these causes, whether consisting of malaria, putrid exhalations or contagion, operate with dynamic power when received through the lungs, it is not possible the putrid gases evolved from the lungs of the consumptive can be innocent. In the case of other infections the conditions of attack or immunity from the effects of the invisible poison consist in the quantity breathed and in the degree of physical resisting power. Whatever vitiates the blood, obstructs the functions of the lungs, debilitates the system, and predisposes to tubercular disease.

PROGNOSIS.—Consumption has been generally regarded as an incurable disease. Cases of cure have been published; but the favorable termination has in nearly all of them been ascribed to the restorative powers of nature acting under circumstances in which unfavorable influences were accidentally withdrawn. Dr. Hughes Benett gives one of these cases in the *Edin. Month. Med. Jour.*, March, 1850. This author refers to various others who have published cases in which "all the functional symptoms and physical signs of the disease, even in its most advanced stage were present, and yet, the individual has survived many years and ultimately died of some other disorder; and on dissection, cicatrices and concretions were found in the lungs." (*Practice of Medicine*, p. 717.)

How far this happy result of treatment or of nature's unaided powers has ever been brought about by remedies, and how far the common fatal termination of phthisis is really caused by active treatment may remain for the present undecided. Allopathic authors agree that the practice that prevailed a half century ago, and even that which is not yet entirely abandoned by some of their number, never succeeded in curing any, and must have shortened the lives of the annual thousands who have died in their hands. Homœopathy promises at least to do no injury: some of its practitioners claim to do much better. Dr. Epps in his work on "*Consumption, its Nature and Treatment*," p. 111,) says: "The alleged incurability of phthisis is the declaration of an error. It is the creation of an impossibility out of a difficulty." He regards the disease as certainly curable because the Hahnemannian *Law of Cure* is inflexible in its results when its application is understood; but we fear all his cases will hardly be recognized as cases of true phthisis; and men of every school willingly admit that many alarming cases have been known to recover without any treatment whatever. Dr. Flint reported twenty-four cases of "arrest" of consumption of whom thirteen recovered fully. The result in all was attributed to: Avoidance of depletion, mercurials, emetics, low diet, and confinement, and other changes in the habits of life.

Hæmorrhage from the lungs so often occurs in phthisical patients that phthisis is generally represented as the consequence of the hæmorrhage; but this is not always true. M. Louis says; "no proposition is at the present day more satisfactorily proved, in the opinion of all accurate observers, than the extreme rarity of hæmoptysis of any amount, unless as a dependence upon tubercles. It is impossible, then in the existing state of things to regard hæmoptysis as a cause of tubercles.* Dr. Evans, of Dublin, says, his observations show that when profuse the hæmoptyses, which are sometimes observed in young people may give rise to the phthisical predisposition, and thus operate as the cause of tubercle.† The rarity of hæmorrhage at an advanced stage of phthisis was shown by Laennec to depend upon obliteration of the vessels in the neighborhood of cavities. It has been established by the inquiries of Van der Kolk and Giullot, that the branches of the pulmonary artery stop short at a certain distance of one, two, or three lines from tubercles of gray granulations; and the more these adventitious productions increase in size, the further do the divisions of the artery stop from their perimeter. To such a degree is this true, that when tubercles are of large size or have given place to cavities, they may be surrounded by a sort of involucrum, ten lines broad into which no ramification of the artery makes its way.

HYGIENIC MEASURES.—The most important are: Laborious exercise in the open air, conjoined with agreeable mental occupation. It is generally advisable to avoid long-continued confinement to any one business. It is well known that consumptives almost uniformly entertain sanguine expectations of recovery, but they expect to be cured without their making any efforts themselves. The disease creates hopes that are never to be realized, at the same time that it takes away the strength, the energy and perseverance necessary for accomplishing even all that might be done by faithful and persistent efforts. "A passive expectation of recovery and calm acquiescence in the prospect of a fatal termination" are characteristic of curable cases. And among these it seems that recovery was the result of exertions involving unusual energy, or innate force of character, or of physical and mental efforts made under circumstances peculiarly calculated to call them out. Exercise is only useful in the open air, which promotes digestion, and improved secretion; and the disease is much more prevalent among persons who follow sedentary and in-door occupations, than among those employed in the open air.

DIETETIC TREATMENT.—In undertaking to "contend with success against the most cruel enemy of the human race,‡ we immediately

* Researches on Phthisis, p. 506. † Lectures on Phthisis, p. 193.

‡ Louis on Phthisis.

perceive the importance of fortifying well all the outposts. As the chief pathological characteristic of consumption is seen in *mal-nutrition* or *mal-assimilation*, no mode of treatment has ever succeeded in curing it that co-operated with the disease by *starving* the patient. The phthisical invalid should be encouraged to eat, *not all he can and whatever he pleases*, but all he can *digest* and *assimilate*. In choosing the articles to be allowed and the quantity of each, the skill of the physician will be as severely tested as it will in selecting specific remedies. The powers of the patient should never be lowered by a restricted diet; but a selection should be made from such simple and plain articles as are found in the patient's daily experience to be highly nutritious, and, at the same time easily digested, producing the least possible gastric or abdominal irritation. It is not only necessary that all the material constituents of the body shall be taken in the food in sufficient quantities, but that the digestive and assimilative powers shall be kept up to the standard of healthy action.

Each individual case requires careful study: it is desirable to allow considerable variety; to cause it to be taken at some well considered, but nearly regular intervals; after food is taken rest should be allowed for a sufficient time to permit digestion to proceed without disturbance; and exercise should be afterwards enjoined as far as the patient's strength will allow. Active exercise increases strength as much by promoting digestion as by compelling the lungs to perform full breathing.

The ends to be attained are:

1. The removal of the cachexia on which the progress of the disease depends.
2. The consequent arrest of the disease; and
3. Promotion of the process of restoration.

As all of these ends are attainable by general measures which develop and strengthen the physical powers of the system, we will consider them separately.

Selection of Food.—Animal food is indispensable to the consumptive, whatever may be the theories or experience of persons in better health. The patient must endeavor to suit his taste and digestive powers by testing the properties in succession of a few such articles as the following: milk, eggs, pure cream, beef-steak, fresh fish, &c., at the same time, taking a due proportion each meal of the best bread, sago, rice, cocoa, sugar, with small quantities of tea or coffee, or beer, but taking a full supply of fluid in free drinks of pure water. Of a few important articles it is necessary to speak separately.

Pork.—It has been believed from the earliest ages that swine's-flesh was injurious to human health. Among the Hebrews it was considered as a cause of scrofula, and hence was prohibited by the law of Moses, and

to this prohibition is still attributed the exemption of the Jews and Mahomedans from scrofula and consumption. In America the merits of pork have been tested on the largest scale, and the preponderance of authority is evidently against it. The filthy habits of the hog; the fact that he has always been known to be subject to tubercular disease; the significance of the name *scrofula* or "swine disease," translated from the Greek name of the same signification; extensive observation in a country in which more hogs are produced and eaten than in any other country, all conspire to convince us that pork should be avoided by all persons, especially by invalids and such as have consumptive or scrofulous tendencies.

Milk, the first article furnished by nature for the use of the higher order of animals, and "the only material throughout the range of organized being so prepared" * is a complex mixture of saccharine, oily, and albuminous principles. It is too complex a mixture to suit the views of a theorist; but it is "a kind of prototype of what an alimentary substance should be, and its character was established before theories were invented." † When digestion is reasonably good it is as nutritious as any other article. In dyspeptic cases the coagulum formed of it in the stomach by the gastric juice is too heavy and solid. Sweet cream is better, but should be taken in small quantity. In large cities nearly all milk is rather doubtful; that from cows kept in stables should never be allowed. Milk originally pure, condensed by "dessication," is the best we have tested in New-York city.

The relative degree of digestibility of a few common articles is thus given as ascertained by experiment. Rice, well boiled, requires for digestion one hour. Sago, 1 hour 45 minutes. Tapioca, 2 hours. Milk, boiled, 2 hrs. Venison steak, 1 h. 35 m. Turkey (wild), 2 hrs. 18 m. Lamb, fresh, 2 hrs. 30 m. Eggs, raw, 2 hrs. Eggs, whipped, 1 h. 30 m. Trout, fresh, 1 h. 30 m. Oysters fresh, raw, 2 hrs. 55 m. Fresh beef, rare, roasted, 3 hrs. Pork, fat and lean, roasted, 5 hrs. 15 m. Pork, stewed, 3 hrs. Mutton fresh, roasted, 3 hrs. 15 m. Bread, wheat, fresh baked, 3 hrs. 30 m. Potatoes, boiled, 3 hrs. 30 m. Soup, beef, 4 hrs. Chicken soup, 3 hrs. Oyster do., 3 hrs. 30 m. Barley do., 1 h. 30 m.

Bread. All invalids, but especially consumptives and dyspeptics, should rely much on bread; and they ought never to eat any that is not free from all poisonous or impure elements. We have often spoken against the use of bread made light by yeast and leaven, still so much in use.‡ Pure bread is the desideratum; and it must be free from the poisonous fungi of which yeast and leaven consist. There are now se-

* Prout. † Graves' Lectures. Dublin.

‡ See North Amer. Journal of Homœop., Feb. 1859. Also U. States Journal of Homœop., Vol. I., p. 293.

veral resources which enable us to avoid these old-fashioned poisons
1. The "*Aerated or Unfermented Bread*," (Broadway and Thirty-fourth street,) New-York, which we have found satisfactory in many cases.
2. The "*Acid Phosphate of Soda*."
3. There is also a "prepared flour" which is said to contain the same ingredients as the last.
4. The bread made light by the effervescence of muriatic-acid and bi-carb. of soda, described in the article already referred to. By restricting the patient to bread made according to some of these modes, with *unleavened* crackers, sea-biscuit, &c., we should be able to bring him up to a better grade of health and strength than he would ever reach under the old poison diet of "*stale bread*".

Fish contain most of the essential elements of a nutritious diet, as fibrine, gelatine and albumen, with much phosphorus and hydrogen. They therefore possess some stimulating powers which render them "rather irritating than plethoric and substantial."* Fresh fish are better suited for the phthisical than for the dyspeptic.

Sugar. The carbonaceous elementary principles have been shown to be beneficial in supporting the failing strength and flesh of consumptives; the operatives of the sugar-houses are said to enjoy a comparative immunity from phthisical disease. The *syrups* so much in popular use owe much of the little good they do to the sugar they contain.

Whatever selection we may make for the proper physical support of the failing or threatened invalid, it is an imperative duty to support and develop his powers by nourishing food which *will agree with him*, whether it would suit another or not. No patient's life was ever prolonged by vain efforts to starve out the fever that seems to be consuming him.

4. As an important means for promoting a healthy action of the skin, and equalizing the circulation, too much can not be written in praise of *external applications of cold water*. These applications should be employed daily, either in the form of baths, sponging, or the wet sheets; in many instances the greatest service will be derived from using cold water applications to the chest in such a manner as to bring out an eruption.

The effect of this remedy is to impart tone and vigor to the cutaneous structures, and to allay in a decided manner nervous irritation.

5. Another valuable *preventive*, as well as *remedial* agent in lung affections, consists in the cultivation of a cheerful and happy disposition. The invalid must never brood over his ailments; for by gloomy ponderings upon his case, he is quite prone to exaggerate symptoms, imagine complaints which have no existence, and thus detract from his prospect of recovery.

* Brillat Savarin.

Laennec ranks the depressing emotions as among the most prominent accidental causes of phthisis, and we are quite satisfied that he has not over-estimated their importance.

6. (And finally,) we recommend a strict avoidance of all excesses, whether in the pleasures of the table, wine, and liquors, or in the indulgence of any thing that over-stimulates and fatigues the mind or body.

TREATMENT.—In all cases when it is well ascertained that tubercles exist in the lungs, either in a latent or partially developed state, the following course should be adopted, as far as circumstances will admit, viz :

1. First, an immediate removal to an equable, mild, dry and healthy climate. In making this selection, we should choose the *interior* of the country, rather than the coast, in order, as far as possible, to be away from the influence of the breezes which blow from the ocean.

"The advantage of a mild and sunny climate, is that daily exercise in the open air can be taken ; and so not only can the natural spirits, but the functions of digestion, respiration, and the skin be kept up to a comparatively natural and healthy standard." But there are other considerations which in late years have led many to doubt the real superiority of a warm over a cold and dry climate; and there is scarcely any northern country that has not, by somebody, been recommended as furnishing a favorable residence for consumptives. It is true that even diseased lungs will bear a cold, dry climate much better than one in which the conditions of cold and damp are combined; and in some cases in whom disease is really, though slowly progressing, a cold, dry and bracing air is much more salutary than a warm, humid and relaxing one. Still the preponderance of authority is in favor of sending the patient in whom phthisis has been detected in the incubative stage, for the winter months to a climate where he may enjoy "mild dry, and somewhat tonic air," particularly if he is of a lymphatic temperament.

Dr. Mac Limont who spent a sufficient length of time at various places noted for possessing peculiar advantages, mentions Mentone, Nice, Cannes, and Hyères ; but, upon comparing his descriptions of the claims of these places, we can see no special merit in any of them. Nice seems to be preferred for patients "with whom a sea-air agrees." The more advanced cases of disease, as well as those in which a considerable amount of acute inflammatory action exists, being characterized by dry cough, accelerated pulse, and much feverishness, will derive more benefit from a softer and more sedative air than that possessed by either of the places above named ; and Madeira, Egypt, Malaga, Rome, and Pau, offer these advantages. *Madeira* possesses "an atmosphere free from extremes and sudden alterations, of great barometrical and thermometrical uniformity, a winter temperature

the four continents and the five zones of the earth, to find that it nowhere exists. America does not pretend to furnish a spot that can approximate freedom from "sudden changes." We have now the means of comparing one point with another, as we have accumulated meteorological observations on the largest scale; but observers are not yet agreed on the lessons taught by these voluminous tables. We will contrast the *highest* and *lowest* points of the thermometer for two successive winters as observed at places remote from each other, as given in *Blodget's "Climatology of the United States."*

Months.	1855-56.			1855-56.			1855-56.				
	FORT SNELLING.			FORT COLUMBUS, N. Y.			FORT INDEPENDENCE, BOSTON.				
	Max.	Min.	Range.		Max.	Min.	Range.		Max.	Min.	Range.
December,	44	30	77		52	14	38		52	7	45
January,	32	34	64		36	6	42		36	5	41
February,	42	31	73		40	4	36		41	1	32
	1856-57.				1856-57.				1856-57.		
	Max.	Min.	Range.		Max.	Min.	Range.		Max.	Min.	Range.
December,	35	15	50		47	4	43		54	13	41
January,	28	35	63		36	5	41		54	9	45
February,	42	35	77		60	6	54		45	6	39
Years.	FORT SNELLING.				NEW-YORK.				BOSTON.		
	Max.	Min.	Range.		Max.	Min.	Range.		Max.	Min.	Range.
1855.	96	33	129		92	6	98		98	5	103
1856.	95	32	187		95	6	101		98	5	103
1857.	91	35	126		91	15	76		91	13	104

It will be seen by comparing the statistics, says Dr. Lewis, of St. Paul, Min., that, although "uniformity is not characteristic" of the climate of either the Atlantic Coast, or that of Minnesota, "the range of temperature for both is limited to very different points on the thermometric scale." At New-York "the Mercury vibrates fitfully from a point above to one below freezing." In Minnesota its vibrations are from one freezing point to another—its more usual range in winter being from 15° below to 15° above zero." It does not usually rise so high as the freezing point during the winter months. It is therefore claimed, that the climate of Minnesota, though colder than that of the Atlantic Coast presents less variation between freezing and thawing; and that fluctuations of temperature between one point and another in a dry cold atmosphere has little influence on health.* Of the relative advantages of one part of our country over another we have many learned essays, but we must omit any comparison between

* Amer. Med. Times. Vol. IV. p. 162.

them. The following remarks by Dr. Dunham, of Newburgh, N. Y., are important. He says, the treatment of phthisis in Brooklin was in his hands most unsatisfactory; but he finds it in Newburgh to be "very amenable to treatment, and although in cases in which the disease is far advanced, he can boast of no cures, yet the relief afforded even to such cases is very remarkable, constant, and enduring for a period to which his previous observations of the disease offers no parallel."

On the climate of the Bahamas, he says: "Nassau enjoys a climate totally different from any portion of the *United States* or of the *West Indies* proper. There are utterly unknown "the sudden alternations of temperature, the searching damp chilliness suddenly succeeding a scorching heat, the humid penetrating north-east winds sweeping down our Atlantic Coast on the west edge of the Gulf Stream—which make the climates of Charleston, Savannah, and St. Augustine so trying to invalids with pulmonary and rheumatic diseases." The climate of Nassau is remarkably uniform—being free from the occasional cold of the Florida coast, and from the extreme heat of Cuba and Santa Cruz. Yellow fever has been long unknown, intermittents are never seen, and bilious fevers are rare; phthisis though not unfrequent among the blacks, is rare among the whites.*

For incipient phthisis this climate permits the invalid to spend his whole time in the open air; the bracing trade-wind prevents him from falling into the lassitude common to tropical regions. Here within four or five days sail, by steam of New-York, the invalid can find English society, refinement, and hospitality aloof from the usual seat of epidemic and contagious diseases, and the variable land climate of the American Continent. In the months of February and March, which might be expected to furnish the greatest vicissitudes of temperature, there is only an average daily range of the thermometer of $5\frac{1}{2}^{\circ}$ for March. While at Pau, in the south of France, it is $7\frac{1}{2}^{\circ}$, at Nice $8\frac{1}{2}^{\circ}$, and at Rome 11° . At Nassau in February the lowest temperature was 71° and the highest 85° on the 28th, and the ascent from the one to the other was uniform.

Wherever the patient may reside, it is agreed by men of every shade of opinion that the patient should constantly enjoy "a pure, warm, dry air, a constant and free in-door ventilation, at the same time that he is supplied with a highly nutritious food. It is claimed that attention to these points alone have often led to the removal of the tubercular predisposition. It is advised to "avoid the places at which consumptives are congregated; but to seek such as afford incitements and resources for physical exertion," and to encourage travelling abroad, not as a task, but as a means of mental gratification.

*Amer. Homœop. Review. Sept. 1859, p. 550.

Daily exercise should be taken in the open air. By this we do not mean that snail-like moping around, with the body coiled up, and a countenance the picture of melancholy and despair; but that vigorous, free and cheerful exercise which invigorates and expands the physical powers, and cheers the mind. Exercise, to be beneficial, should be employed in such a manner as to bring all of the muscles into moderate and agreeable action, and as a pleasant recreation, rather than a necessary task. By this means the organism is strengthened, the circulation equalized, the "blue-devils" exorcised, and the pulmonary organs placed in the best possible condition to recover themselves.

In pursuing this course of physical exercise, regard should be had to those gymnastic and other sports which tend to expand and strengthen the thorax. Too much can not be said with reference to the importance of this subject, also the *erect* position of the body, and the habitual custom of taking deep and free inspirations; for the muscles of the chest, as well as of the other parts of the body, waste away and become enervated without constant exercise in a natural manner.

In connection with this course, we must strongly advise the frequent use of *breathing tubes*. Having experienced decided benefit from employment of this kind of exercise of the lungs, and having often seen it adopted by others with prompt and marked advantage, we speak confidently of its efficacy in debility of the pulmonary organs.

Systematic employment of physical movements is now accepted as an efficient means of averting consumption. The contraction of the chest in phthisical patients is in part owing to hereditary conformation, but it is generally increased by indolent and sedentary habits. However it may have originated, much can be done towards correcting it, and in correcting a defective conformation many other accompaniments of imperfect respiration will be removed.

A systematic course of exercises which shall especially bring into play the muscles of the chest and keep the body erect, will greatly enlarge the capacity of the chest; the lungs may be made to receive a much larger quantity of air; but it is necessary that this course of health-giving exercises shall be commenced before hopeless structural disease already exists, and that it be so directed as not to give "fatigue and exhaustion in the nervous system out of all proportion to the effect upon the muscles." The general indication, says Dr. C. F. Taylor,* "will be met by employing the muscles in such a manner that, while they are made to act with more or less force, no greater demand shall be made upon the nervous system than can be easily and healthfully responded to.

"The first thing to be attended to and never to be lost sight of for

* Theory and Practice of the Movement Cure, p. 212.

a moment, is the circulation of the blood. Feebleness of the heart's action, imperfect respiration, poor quality and small quantity of the blood, and especially want of affinity between the blood and the tissues, all conspire to produce the livid countenance, cold extremities, and consequent pectoral congestion and oppression so characteristic of pulmonary consumption." The specific movements by which these conditions may at least be greatly improved we will not here describe in detail. It is advised to "act almost wholly and very perseveringly on the extremities, by rotations of the feet, hands, arms, and legs, and by flexions and extensions of the same," but "there should never be any attempts to expand the chest, till after the peripheric circulation has been improved." After a proper distribution of the fluids has been secured and maintained, improved health is sure to follow.

MEDICAL TREATMENT.—The great danger is that of over-medication. The invalid who to-day is acknowledged to be in the incipient stage of consumption is already suffering from the effects of many agents taken as remedies; and each after a *fair trial* has been condemned. When the true remedy is selected it is quite common to defeat its good effect by frequent repetition, by alternating with other remedies, or to change speedily for something else. We are much more likely to succeed by carefully selecting the most appropriate remedy and give only a single dose. In some cases we should wait for perhaps a few days, in many cases even several weeks before repeating. But few patients or physicians have patience for such long delays. We may hope, in curable cases, to succeed with some of the following remedies: *Jecorus-aselli*, *Sulphur*, *Hepar-sulphur*, *Calcarea-carbonica*, *Mercurius*, *Stannum*, *Ferrum*, *Silicea*, *Sepia*, *Phosphorus*, *Phosph.-acid.*, *Lobelia*, *Sanguinaria*, *Acid-nitricum*, *Drosera*, *Lycopodium*, *Hypophosphite of Lime*, *Lachesis*, *Iodine*, *Iod.-potassæ*, *Arnica*, *Sambucus*, *Bella-donna*, *Hamamelis*, *China*, *Alcohol*.

PRELIMINARY OR FIRST STAGE.—*Asellum-jecoris* or *Cod-Liver Oil*.—It has been believed in all ages that oleaginous substances have some beneficial influence in the treatment of consumption, whether their action was to be attributed to their medicinal or to their nutritious properties. It at least supplies nutriment in a concentrated form, and it also holds in solution a fine attenuation of *Iodine*.

Cod-liver oil is usually easily digested; when the stomach will not digest it, *Pulsatilla* or *Creasote* may correct the weakness of this organ. When cod-liver oil acts beneficially we accept its aid, but we do not accept the reasonings of those who have tried to explain its mode of operating. Dr. Madden, (*British Jour. Homop.*, Vol. VI., p. 433.), shows that the effects of the oil are quite similar to those obtained by the provers of *Iodine*. Dr. Pope, in a later number of the same Journal, considers that this oil "presents us with food, in the shape of oil, of a

highly nutritious easily assimilable character, and at the same time with a medicine homœopathic to the tubercular diathesis," and by it the most happy curative effects are often produced. Though it be rendered probable that *Iodine* is the only real curative agent in these cases it is by no means improbable that its medium, the animal oil, which is composed principally of carbon and hydrogen, may serve the purpose of neutralizing a portion of the inspired oxygen, which would otherwise act upon the weakened lungs themselves. It is at least regarded as one of the most efficient remedies known; but it is admitted on all hands that it can only cure in earlier stages, and that it needs to be long persisted in; Dr. Turnbull continued its use for several years.

SYMPTOMS.—"The patient is thin, loses flesh rapidly; the complexion is pale, the cheek frequently surmounted by a pink flush; the lips exsanguine; the appetite very deficient; the power of digestion feeble; the bowels easily deranged; a sense of languor or weariness is felt after slight exertion; respiration short and hurried; when tubercular deposit takes place in the lung, the cough speedily becomes troublesome and the physical signs of disease rapidly defined." If the history of the case shows hereditary predisposition to tubercle, Iodine alone is homœopathic to these cases, both before and after tubercles are formed. The quantity varies according to the digestive powers of the patient; "but a dessert-spoonful of the pure, clear, pale-colored variety will accomplish all that can be obtained from it."*

It is to be regretted that so few positive species have been discovered for the cure of tubercular phthisis, but we are sanguine in the belief that many such remedies will sooner or later be found.

Cod-liver oil is still given in the third stage in some cases with success; it is believed to be less suited to those presenting the following characteristics; emaciation not strongly marked; complexion pale and heavy looking; cheeks puffy; muscular tissue flaccid; the areolar tissue distended with serum; appetite capricious, rather than deficient; nutrition perverted rather than positively checked; bowels inclined to constipation rather than to diarrhoea, but often extremely irregular; cough slight but decided; difficulty of breathing often well marked, especially on going up-stairs or walking rather more rapidly than usual; there is also in general palpitation. These cases show a hereditary predisposition, and evidences of phthisis are visible in childhood; development of the frame seems prevented by some depressing constitutional influence; the complexion is pasty, the muscles soft and flabby; the bones are inclined to curve; the circulation is languid; strength is feeble and all the usual physical energy of early life is absent. Here likewise

* Pope, p. 35.

Putrid taste in the mouth, loathing of food; eructations without smell or taste, vomiting, water-brash.

Cough with rawness and scraping of the throat and oppression of the chest. Violent deep cough with retching; dry cough in paroxysms, worse at night; haemoptysis; short breath; suffocative cough and asthma, and palpitation of the heart. Teste* says, Hepar has cured cases in which there were "stitches in the eyes; photophobia; discharge and fetid pus from the ear, erysipelas of the face; dryness of the throat; scraping of the throat, with difficulty of talking; canine hunger, eruptions; paroxysms of nausea with coldness and paleness; swelling and pressure or pain at the epigastrium," &c. Hahnemann says, it cured cases in which mental symptoms were prominent; as, dissatisfaction with one's self and others; unpleasant recollections; dreamy atrabilious mood; a ferocious malignant spleen, though occurring in a person of benevolent and merry disposition.†

Calcarea carbonica.—Hahnemann attributed important anti-psoric powers to this remedy. It is said to apply more than any other remedy to diseases of the reproductive system; it is especially useful in the diseases of childhood and is the best reliance for the correction of *mal-nutrition*. It acts specifically on the mucous membranes, on the fibrous and osseous system; on the nervous, the serous, the venous and the lymphatic systems. Persons curable by it are of lymphatic temperament, scrofulous or rickety, show plethora of the veins; easily take cold, are frail, poorly fed but tend to grow fat. Its application in consumption is chiefly restricted to cases in which these features predominate. The patient is feeble in body and mind, though in some cases mentally precocious, and often regarded as a genius; he is subject to depression of spirits; weeping mood; restless and anxious; has no hope of recovery, is hypochondriacal; the hair falls off; the eyes are feeble; can not bear gas-light; and he suffers from all possible derangements of digestion; the nervous system becomes excessively irritable especially in females; there is hysteria a fault-finding mood; nervous exhaustion, especially menorrhagia, in males spermatorrhoea, or exhausting emissions. It is proper in the stage of purulent expectoration, especially after Sulphur or Nitr.-acid.

Silicea.—This remedy embraces most of the symptoms that belong to the phthisical dyscrasia, consequently, it is a remedy of value for the constitutional condition in congenital or hereditary cases. The dyspeptic symptoms peculiar to consumption are also nearly the same as under Hepar. The symptoms that show themselves in the respiratory system are thus given: roughness and sore feeling in the larynx, with dry hacking cough, causing soreness of the chest. Hoarseness with cough,

* Mater. Med., p. 293.

† Chronic Diseases, Vol. II., 283.

suffocative night cough; excessive, continual cough, with discharge of translucent mucus or bloody mucus. Vomiting of purulent matter when coughing. Ulceration of the lungs. Discharge of clear, pure blood with deep hollow cough; the chest painful as if bruised. Shortness of breath, felt on walking or exercising. Weakness and oppression of the chest; aching pain in the sternum; congestion of blood in the chest, with chilliness of the surface. Oppressive heaviness in the region of the heart and palpitation when sitting still.

Stannum.—Several authors have cured a species of *phthisis*, *hectic fever*, *chronic catarrh*, *mucous asthma* with *tin*. And Stahl has observed that it is capable of producing a species of *phthisis*.

Consumption occasionally arises in those whose lungs are naturally weak and irritable, in consequence of violent and protracted syphilitic attacks. In these instances the most suitable remedies are, *Mercurius*, *Acid-nitr.*, *Potassæ-iodide*, and *Hepar-sulphur*.

When phthisis is threatened during the progress of chlorosis, or in consequence of anæmia, some form of *Ferrum* is indicated.

Ferrum.—Dr. Müller has recommended *Ferrum* as a remedy for phthisis, and it is now becoming popular in Germany. (*Report. Dispensary*, Leipsic, 1852.)

Dr. Luther (*Brit. Journal of Homeop.*, April, 1860, p. 335), says that at a village of four hundred inhabitants, near Wittenberg, in Prussia, "consumption is unknown; and other forms of scrofula are of the rarest occurrence, whilst in neighboring villages that lie higher, these disorders are common." This valley is supposed to owe its protective influence against phthisis to a large number of chalybeate springs, some of which contain carbonates, and others strong sulpho-aluminous chalybeates. The inhabitants attribute their freedom from phthisis and their notorious good health and longevity to this chalybeate water which they use for all purposes. We can not suppose that the unlimited use of iron in any form can be safe to consumptives. It first became popular upon the recommendation of M. Troussseau more than thirty years ago. He has since discovered that though there was apparent improvement in his hospital cases of chlorosis and anæmia, they all afterwards died of phthisis, hastened to a fatal termination by his treatment. In December, 1859, this author, finding the profession still following the wrong trail on which he started them thirty years ago, thought it necessary to publish at length his confession and recantation of the professional sins of his earlier years.* For twenty years he has been diminishing his doses. He is now afraid to give iron in *any* quantity in *any* case in which constitutional tendencies to phthisis are suspected. The profession at large can not countermarch so easily. We hope that

* *Gazette des Hopitaux*, Dec 22, 1859.

within the next quarter of a century they will learn to come back to the true ground of safety and efficiency.

M. Troussseau has proved, what homœopathists knew before, that iron is a remedy for consumption, because it is capable of exciting it. *In our doses* it is able to cure the symptoms which *in his doses* it caused in so many cases.

The cases in which *Ferrum* is specially valuable are those in which† "the patient is usually between twenty and thirty years of age; his family history is free from any hereditary taint or tubercle; he is of a sanguine temperament, of a florid complexion, with an active circulation, and an easily-excited nervous system; the disease has been excited by neglected catarrh, causes which originated mal-nutrition with frequent inflammatory attacks upon the pulmonary organs. Epistaxis, hæmoptysis, headache, congestions in various parts are easily excited; hectic fever runs high, and the loss of strength is very rapid, there is dyspnœa, vomiting of food, or lienteria. For this form of phthisis, Dr. Clotar Müller very confidently recommends the Perchloride of *Ferrum*, in doses of one to three drops, of the first to the sixth decimal dilution. See a translation of his paper, *British Journal of Homœop.*, Vol. 18.

The form of iron with which we have succeeded best, is the *Pyrophosphate*. In the third trituration it has always improved anæmic, dyspeptic, or chlorotic cases.

The second stage of these cases is best met by *Phosphorus* or *Bromine*. The frequent attacks of congestion and inflammation which mark their course are best met by *Aconite*, *Bryonia*, and *Belladonna*. In the third stage Dr. Müller recommends the *Iron* again.

Lobelia-inflata.—*Lobelia* has been used empirically on such a large scale in the United States, that its powers are well known. When proved homeopathically it develops a train of symptoms analogous to those of *Sulphur*. In phthisis it corresponds to the constitutional psoric symptoms generally, to all the stomach derangements that are common in the later stages, to the catarrhal fever of the first stage and to the intermittent hectic of the second. Besides these important features it presents the following *bronchial symptoms*: Burning in the throat; dryness of the throat; burning prickling in the throat, increased secretion of viscid saliva, nausea and eructations. Sensation of a lump in the pit of the throat, impeding deglutition. Sensation in the œsophagus, as if something were rising in it. Titillation in the larynx, with frequent short, dry cough. Sensation of a foreign body in the throat impeding the breathing and swallowing. Tightness of the chest, with short and laborious breathing. Chronic dyspnœa; paroxysmal asthma; pains in the chest increased by deep inspiration; deep-seated pain in the region of the heart. Its special sphere of

† Dr. Pope.

action has been assigned to the pneumogastric nerve. It certainly affects promptly all the organs supplied by this nerve. It also operates decidedly upon the skin, producing a peculiar form of herpes, formerly called "James River Tetter." It was common on that river and cured by Lobelia.*

Sanguinaria-canadensis.—This is one of the best agents we have for the prevention, if not the cure of consumption. In allopathic doses it acts as a tonic, narcotic, stimulant, or emetic, according to the dose employed. In doses of from eight to twenty grains it produces nausea, heat in the stomach, faintness, often vertigo, indistinct vision and finally emesis. In smaller doses, after continuing its use five or six days, its effects on the pulse resemble those of Digitalis. We have long been familiar with its powers in many forms of pulmonary, bronchial, hepatic and gastric disease. We have used it with success in patients who were subject to distressing affections of the chest, repeated attacks of pneumonia, haemoptysis, and spasmodic attacks resembling pertussis. Also in protracted catarrhal fever which leaves obstinate cough and threatening consumption. The cough has generally been mitigated, the pulse diminished in frequency, the powers of the whole digestive system increased; the appetite is always improved, or regulated in cases where it has been morbidly great.

SYMPTOMS.—Coryza, rawness of the throat, pain in the breast, cough, salivation, looseness of the teeth. Dryness of the lips; the tongue feels sore as if burned; white-coated sore feeling of the epigastrium, increased by eating; burning heat in the stomach, with headache; gastritis; nausea, vomiting with headache, periodic nausea, nausea and chill, diarrhoea, torpor and atony of the liver with colic; throbbing, beating in the abdomen; flatulent distention of indurations in the abdomen, haemorrhoids.

Chronic dryness in the throat; continual severe dry cough, with pain in the chest and circumscribed redness of the cheeks, tormenting cough with expectoration. The peculiar cough, emaciation and hectic fever of pulmonary consumption.

Hydrothorax, asthma, pneumonia, and pneumonia typhoides; pain in the chest with cough and expectoration. Burning and pressing in the breast and back; palpitation of the heart, burning of the palms of the hands and soles of the feet at night.

In chronic forms of pneumonia the first stages of phthisis, in hepatisation of the lungs and bronchitis; putrid sore throat.

We have had much allopathic experience with this remedy in diseases presenting the above symptoms and do not like to acknowledge that all former successes were gained in violation of law. It has ap

* Transactions of Amer. Institute of Homœopathy. Vol. I.

peared to us that the remedy is truly homœopathic to all symptoms enumerated and a vast number more; but that it sometimes produces its curative effect by a local *primary* action, and in other cases it cures by its *secondary* action.

Phosphorus.—In incipient as well as confirmed phthisis in persons of meagre, slender form; fair complexions, and strong sexual feelings. When in the lower lobes and of an asthenic type, in children and young girls of delicate constitutions, with dry short cough, shortness of breath, great emaciation, tendency to diarrhea, or perspiration, it is useful.

Case.—Dr. Fincke gives (*Amer. Homœopathic Review*, Mar. 1861, p. 285) the case of a woman aged thirty-four years, "dark complexion and sanguino-nervous temperament," who had "hard cough, hurting her chest and head, with a pressing forward of the eyes; and thick yellowish purulent expectoration, excited by burning pains in the pit of the throat, which continued during the coughing; dullness under the right clavicle; mucous rattle in the right upper lung anteriorly, in expiration and inspiration: puerile respiration in left upper lung; pains under the sternum when sewing; great emaciation; sallow countenance; hollow sunken eyes with dark rings around; irregular chills." Phos. $\frac{1}{100}$. Seven days later: "Patient much improved; she still coughed hard especially in cold weather. Phos. $\frac{1}{100}$. After that all the symptoms disappeared."

It is well known that *Phosphorus* is a necessary constituent of all healthy nerve structure. And in some conditions of low nervous vigor its employment may be of service. As it enters largely into the composition of most nutritive kinds of grain, and was not placed there without purpose. It is no specific for phthisis, though it acts usefully on certain states of lowered nervous energy.

The hypo-phosphites have not yet established their claim to the title of specifics for consumption; and they never will, especially in allopathic hands. "Ignorant of the homœopathic action which is the true cause of the success of specific remedies when properly administered, they give quantities so great, as, in most instances to aggravate the symptoms of the malady. Occasionally these medicines give indications of their value in successful results, simply because the physician exhibits by accident a small dose, or finds a patient not very accessible or responsive to homœopathic action." *Phosphorus* has been known for half a century to be a remedy for consumption; but allopathic experience soon proved it not always safe. Dr. Churchill then brings it up in a combination which is safe; but it is speedily pronounced inert. Our experience with the hypo-phosphite of lime has not been entirely unsatisfactory. In the course of three or four years we have generally succeeded in obtaining as good results from it as from *Calcarea-carbonica* in cases not widely different from those in

which the latter is known to be specific. In small doses of the third trituration it certainly improves digestion and assimilation. We have not found it a specific for tuberculosis. Its precise sphere of action has not yet been pointed out.

Drosera rotundifolia — Sun-dew. Vicat (*Treatise on the Poisonous Plants of Switzerland*) says, the Droseras are "acrid and corrosive; they cause ulceration of the skin and injure the teeth. Triturated with salt they are used as vesicatories. The sun-dew is sold in the shops as a useful remedy in coughs, asthma, ulceration of the lung, &c.; still it is certainly poisonous for sheep; it affects their liver and lungs, and causes a cough, that makes them waste away slowly." Hahnemann refers to Borrhichius to prove that "it causes a very violent cough among sheep." Several medical men of former times employed it in "cough and in phthisis with purulent expectoration." The plant was first described and figured by Dodoens, of Belgium, in the sixteenth century, under the name of *rorella prima major*.

Linnaeus directed the acrid juice for application to warts and corns; Haller says it causes excoriations and ulcers of the skin. A German botanist, named Siegesbeck, in 1716, says, the plant is injurious to sheep, particularly by exciting a cough, which is often fatal. He and also Heermann (Erfurt 1715) found it to allay asthma, remove hoarseness, and restore the lost strength. The tincture was found useful in catarrhal fevers (influenza), epidemic whooping cough (as that of 1712).

Auscultatory Signs.—Cases in which it was successful: dullness more or less extensive, weakness of the respiratory murmur, roughness of inspiration or expiration, respiration in several impulses, prolonged expiration, *souffle* behind the capsula.

Functional Signs: Cough generally dry, oppression, spitting of blood, thoracic pains, night-sweats, emaciation. Under the influence of *Drosera*, when the general state of the patient was good, Dr. Curie says, he has seen all these symptoms disappear. The cases in which it promises little are, those in which the ever is of a continued character; where the food is not duly assimilated, as is often the case with phthisical patients who have large cavities, and some others where the stethoscopic signs were not strongly marked. Even in these, it gave relief for the first week, and when it failed the patient died more quietly.

Dr. Eugene Curie read before the Academy of Sciences of France, September 2, 1861, the results of his experiments on the physiological and therapeutical properties of the *Droseras*.* He says:

He chose the domestic cat as an animal to experiment upon, from

* *Bulletin de la Société Medicale Homœopathique de Paris*, Nov. 1861.

the opinion that tubercles had never been found in them. He gave to one cat fifteen centigrammes per day of Drosera, triturated with sugar of milk, and killed him with it at the end of six weeks. He gave to another at first a drop at a dose, which was afterwards increased till it amounted to 1600 drops per day, of the spirituous tincture evaporated in the air, and latterly in vacuo. This animal was killed at the end of one year. A third has been using the drug for six months, and shows the same symptoms as the two former.

Symptoms Produced.—All three had diarrhoea at the commencement, and a marked weakness of voice was noticed after six weeks. They could utter sounds but they could not be heard, though at the commencement their cries gave great annoyance to the neighbors.

Appearances on Dissection.—In the two animals dissected. The first on being opened showed beneath the pleura some almost gelatinous deposits surrounded by an anomalous redness. The changes in the lungs were not such as revealed tubercle to the eye but they were plainly revealed by the microscope; and Dr. Gratiolet, of the Museum Department, satisfied himself that these deposits were of a tubercular nature. There was also in this animal considerable enlargement of the mesenteric glands.

The second cat killed after one year of experimental treatment, showed "lesions consisting of small white granules, the size of a pin's head, situated beneath the pleura, and surrounded by a very red injection that penetrated into the pulmonary tissue, but was unaccompanied by induration. These granules were only found under the pulmonary pleura. None were noticed in the parenchyma of the lungs.

These gray granulations were moderately hard: they could be crushed on the glass, and showed under the microscope the following characters: irregular corpuscles, granular internally and externally; the external granulations brilliant and somewhat characteristic. Most of the corpuscles were six seven-thousandths of a millimetre in diameter, almost unaffected by acetic acid. Though some other accessory elements were met with, the attention was chiefly confined to the tubercular structure which constituted the principal mass of the granulation, and left no room for doubt as to its character.

There was also enormous development of the submaxillary glands, the hypertrophy of the glands of Peyer; and the shut vesicles of the large intestine, which contained an opaque fluid that showed under the microscope granular corpuscles. In the spleen they were "so much developed that they could be seen through the exterior covering; and the spleen, when cut into, seemed to be formed entirely of them. They were decidedly larger, than a large pin's head, and contained in the interior a mass of glandular corpuscles.

It then appears that Drosera causes the production of tubercular

elements in the lungs, and acts at the same time on the lymphatic system in general, thus presenting the analogy recognized in all ages between the tubercular affection and the lymphatic, not to say scrofulous temperament. In these experiments the hypertrophy of the lymphatic organs was a hypertrophy of the proper elements of the organs, and was unaccompanied by any plastic deposit.

Use in Tubercular Disease.—Dr. Curie says, *Drosera* has been used with success in doses of from four to twenty drops of the tincture in twenty-four hours.

Lycopodium.—A case by Dr. Gregg, (*On Phthisis, &c. Canandaigua, N. Y., 1859*, p. 56). A young lady, aged twenty-four, in whom a strong hereditary tendency to consumption existed, had "severe pain through the left lung, with soreness, cough, and considerable emaciation. These symptoms had continued some weeks and were increasing in severity. *Lycopodium* corresponded most nearly with her symptoms, and was given for two weeks. There were then "discovered hard lumps or knots in the muscles upon her shoulder-blades, which proved to be boils that were very painful, and which, when they came to discharge, left pits in the flesh a half inch to three quarters in depth. The pain and soreness of the lung were both relieved as soon as the boils began to form, while the cough subsided with the pain." The pulmonic symptoms disappeared, returning only once afterwards from taking cold, and were promptly relieved by the same medicine. The author is confident that there was tuberculous matter already deposited in the left lung when first examined; the symptoms gave full evidence of the fact, and the patient had lost two brothers within two years by consumption.

Lycopodium.—Phthisis developed by neglected catarrh or pneumonia; there is hectic cough, with purulent expectoration. Tubercular consumption following haemoptysis, suitable after *Calcar, Sil., Phos.*

Cuprum is said to hasten the suppuration of indurated glands, and thus to be unsafe in advanced cases. But, says Dr. Kissel,* it is possible that the inflammation set up round the tubercles may be curable by Copper, as it is in some cases by Nitre, or Ferrum. The bursting of vomica in the lungs otherwise healthy "may be hastened by Copper, and the unhealthy suppuration made healthy so that the cure is thus made possible." He gives a case of a boy, aged eleven, in whom "a slight, unfrequent, dry cough," became gradually stronger and more troublesome. The expectoration became thicker, at length yellow and sweetish in taste. The boy was confined in bed and wasted away. For weeks he had chills and heat in the evening, and sweats in the morning. Complexion sallow, eyes deep set; skin moist and flaccid pulse small and frequent. Percussion yielded a dull sound below both

* British Journal of Homœop. Oct. 1860, p. 540.

clavicles, and beneath the scapulae, and the respiratory murmur was in these places indistinct and scarcely audible; by very deep inspiration there was a slight *ronchus sibilans*. Tongue clear, and taste natural; appetite bad. Daily five to eight very foetid, watery, brownish stools. There was no hereditary predisposition to tubercles. Ordered six drops of tincture of Acetate of Copper every hour.

Four days later it was seen that the diarrhoea had ceased and the appetite had returned; the morning sweats and evening fever were more moderate, the cough was less frequent, and the expectoration diminished. The Copper was continued for fourteen days more, when there remained no more morbid symptoms. The percussion and auscultation symptoms had vanished; and the patient continued well. We have often seen good results from the third trituration of Cuprum-sulph. in advanced cases of phthisis. In a recent case, though it failed to save life, it produced such palliation of the cough and restlessness that the intelligent attendants were afraid to give the minute powder in solution as often as it had been ordered. They thought it must be strongly sedative. In curable cases in psoric constitutions we have found the general dyscrasia and debility slowly removed. "Its effects are best shown where there is great and permanent structural change in the stomach. Excessive vomiting with great exertions, and extremely oppressive anxiety. Violent pain in the stomach; oppression of the stomach, colic, obstinate constipation; diarrhoea; nocturnal emissions."*

In the third stage, Arsenicum and Sulphur will be found appropriate.

Dr. Pope says: In a well-marked case of acute tuberculosis, of apparently hopeless character, in a girl of a highly strumous constitution, Arsenicum and Calcarea, given alternately produced a most rapid and unexpected change resulting in complete recovery.

Kreosote.—Constant, spasmodic, violent cough accompanied by violent retching: the expectoration copious, mucous and purulent; the patient can not lie down without great distress; stitching pains in the chest; bitter taste in the mouth; cadaverous breath; frequent greenish, watery diarrhoea; hectic fever; copious secretion of the mucous membranes and abscesses which are excessively offensive in character, accompanied with depression of nervous power. In these conditions, says Dr. Kurtz, Kreosote is much more effectual than Arsenic, which is usually prescribed.—(*Hygea*)

China, is given in the third stage of phthisis. In a discussion on this disease reported in *Transactions of the British Homœopathic Society*, No. 3, Drs. Kidd and Yedham spoke most highly of the results they had obtained from the pure tincture of China in the advanced stage of phthisis. The power of China and the Sulphate of

* Noack and Trunks.

Quinine in arresting the destructive metamorphosis of tissues is only beginning to be appreciated. See Vol. I., p. 488.

Bromine.—An article in the *Monthly Hom. Review*, Nov. 1861, recommends Bromine as a valuable remedy in acute tuberculosis.

Phosphorus in combination with Lime.—Dr. Churchill in his paper in the *Dublin Hospital Gazette*, Aug. 18, 1847, states that the “proximate cause, or at all events, an essential condition of the tubercular diathesis is the decrease in the system of the Phosphorus which it contains in an “oxygenizable state:” of the Hypo-phosphites of Lime and Soda, he says: These articles are soluble and assimilable. They induce “manifest increase of nervous power, sometimes even from the first day of their administration, together with an unusual feeling of comfort and strength. At the same time the nervous symptoms, if they have any, disappear; also functional derangements, irritation of the intestinal mucous surfaces. The appetite increases often in an extraordinary manner. The evacuations become regular and more abundant; the perspirations, if they have existed, cease; sleep becomes calm and profound.” He reported in 1858, thirty-five cases, all of whom, he says, were in the second or third stage of phthisis. Of these “nine were completely cured, eleven experienced great amelioration, and fourteen died.”

The experiments of Dr. Churchill have now been repeated on a large scale in Europe and America, and a great amount of experience has been published. The hypo-phosphite of Lime, when successful at all, is so in minute and attenuated doses; we give it, not to supply either Phosphorus or Lime to the blood, but as the means of dynamically correcting functional derangements, and thus enabling the system to select from the food the various basic elements necessary for the blood.

Alcohol in Large Doses.—Alcohol in phthisis is often capable of affording transient relief from symptoms which might not long require its use; it is also useful in small doses in nearly all cases; but it is a perilous remedy when prescribed in large doses for conditions which we know will demand its constant repetition for a long period. Its influence is proved to be curative to a certain extent, but there must be some limit to the size of the dose. It is prescribed by some practitioners in this city on the presumption that there is something in consumptive diseases to give the debilitated sufferers perfect immunity from the bad consequences of this poison.—If we had only to look to the lungs and the general tubercular condition we might safely give large quantities of alcohol; but the stomach is also the seat of disease in nearly all consumptives. For weeks or months before death they suffer from pain and tenderness of the epigastrium, loss of appetite, thirst, frequent vomiting of acid matters. These symptoms often cause

more difficulty than the pulmonary disease ; and after death, M. Louis found the stomach softened or partially destroyed in texture in about one-fifth of the fatal cases ; and he supposed this change to be the result of inflammation. It is probable that he was mistaken in his opinion on this point, and that the solution of the coats of the stomach is effected by the action of the gastric fluid which has retained its digestive power after death. But can it be possible that burning, irritating draughts of alcohol even largely diluted, can exert any soothing or invigorating influence upon a patient affected with any of the symptoms just enumerated ? See Vol. I., 668. 861.

The influence of Alcohol on the liver must not be overlooked. In all the commonest cases of phthisis in every stage, the liver is in a state of torpor or congestion ; the blood which should flow rapidly through it from the stomach finds its course obstructed ; the capillaries of the mucous membrane of the latter organ are congested ; the appetite, though sufficiently craving, is capricious, morbid. If strong brandy can be taken without sensible and immediate injury, it is because the case is not a bad one. If it be long continued it must increase and render incurable the structural disease that already exists. If in large doses it does not intoxicate, it can only be that our patient has already reached that deplorable condition in which he finds it "impossible to get drunk ;" if it does intoxicate, it shows that the patient has already entered upon that downward course of physical and moral degradation in which recovery of health is impossible ; and if it were possible, to the patient whose earthly existence is thus prolonged, life itself would be of little value.

In the effort to support the strength of a consumptive patient by stimulants, we encounter a danger which in acute diseases is not feared. The patient who has passed the crisis of an acute disease sustained by stimulants can bear to have the dose repeated at intervals for the purpose of keeping up uniform action, since we know that it will not long be needed. In *chronic* cases, if we attempt to avert the depression which follows the exhilaration of each dose, we may indeed effect it for a time ; but the augmented reaction is increased in force each time it is postponed ; and it becomes at last so painfully depressing that the patient can not resist the instinct that prompts to the effort to put it off again, though at the expense of rendering recovery hopeless.* So decidedly has Alcohol been seen to produce injurious effects in all the febrile forms of the disease, that many authors have decidedly forbidden all stimulating drinks ; as Dr. Epps (p. 237.) says, "Wine is poison in this disease and so is ale (in reference to the sick, pale ale) is deep-dyed delusion."

Hæmorrhage from the lungs is supposed to occur in more than half

* Brit. and Foreign Med. Chir. Review.

cussion increased, emaciation progressing; the patient gloomy and despairing, though very unwilling to die; pains in the chest; nightly cough and the bloody expectorations were distressing. Gave Acalypha-indica, twenty drops of seventh dilution in a glass of water, — a spoonful every two hours.

Next morning the bleeding had ceased, pain and cough greatly decreased. In a day more, pain, cough and expectoration all gone. Ten days later the man felt perfectly well, fine appetite, perfect secretions walked five miles home.

2. ACUTE PHthisis.—ACUTE CONSUMPTION.

GRANULAR PHthisis.—PHthisis GRANULEUSE.

Though ordinary consumption is eminently a chronic disease, lasting several months or more, we frequently meet with cases which pass rapidly through all its different stages, and end fatally. Dr. Flint says, one patient had been in good health when he was attacked by haemorrhage from the lungs. He passed rapidly into confirmed phthisis, and died in seventeen days from the first attack. But in these cases there is perhaps always a predisposition and often a latent tubercular deposit already existing, as in that same case, in which there had also been a slight haemorrhage several months before, though the subsequent hacking cough without expectoration was so slight as to excite no apprehension.

In true acute phthisis there is no known or suspected tubercular deposit till the acute disease begins; but, after that time, the deposit is remarkably abundant, extensive, and it undergoes the changes of softening and expectoration with great rapidity.

More correctly still is this name given to the form of the disease, in which there is an accumulation in great numbers of gray semi-transparent granulations, either remaining isolated, or coalescing, and giving rise to a species of infiltration. This is thought to be essentially distinct in its nature from ordinary phthisis. The granular deposit may effect both lungs, and death may ensue before there is time for softening and excavation.

DIAGNOSIS.—The tubercular deposit being developed in both lungs so equally, the dullness on percussion is not so distinctive as in chronic phthisis. Auscultation may only furnish such phenomena, as the vibrating and bubbling sounds, and sub-crepitant rale, belonging to acute bronchitis. There are not the exaggerated resonance, broncophony and fremitus that denote tuberculous solidification.

SYMPTOMS.—Chills, followed by some degree of fever; pulse rapid with heat and dryness of the surface; great muscular prostration;

notable increase in the frequency of the respirations, with or without great suffering from dyspnoea; lividity of the prolabia; towards the end of the disease, quiet delirium; *subsultus tendinum* and sometimes incontinence of urine may occur before death; pain in the chest not severe; cough more or less violent, dry, or with small expectoration, sometimes bloody. The progress is so rapid that emaciation does not occur to the extent it does in chronic phthisis.

Acute Phthisis is less strongly marked than chronic phthisis. If the positive symptoms of the latter form of disease are present in an inferior degree, but the case is progressing rapidly, then acute phthisis may be suspected.

From the frequency of respirations, dyspnoea, lividity and rapidity of circulation we might infer disease of the heart; but the latter ought to be positively known by conclusive physical signs, and thus distinguished.

Acute phthisis is distinguished from *pneumonitis* by the latter having physical signs which show solidification over the whole lung (in adults) commonly the lower lobe, and it travels from lobe to lobe. In the former the disease is developed simultaneously in both lungs, the upper portions of the lungs being most affected.

TREATMENT.—Our main reliance must be placed upon the following remedies in this malady: *Aconite*, *Phosphorus*, *Stibium*, *Bryonia*, *Sannum*, *Mercurius-hydriodicum*, *Ammonium-carbonicum*, *Kali-hydriodicum*, *Digitalis*, *Lobelia-inflata*. For the most part, we prescribe these medicines at the first attenuations.

TUBERCULOSIS OF THE BRONCHIAL GLANDS.—BRONCHIAL PHTHISIS.

Enlargement of the bronchial glands is a common accompaniment of pulmonary tuberculosis, though the symptoms during life do not always suggest this condition. In the cases in which tuberculosis is limited to these glands they may increase considerably in size; they may go through processes similar to those which they undergo in the lungs, producing cavities communicating with the bronchia, or the oesophagus, or even the pleural cavity. The glands primarily affected are those situated near the bronchia; thence the disease extends to the glands imbedded in the lungs, in the direction of the bronchial subdivisions, also to those in the pericardium, the oesophagus, and the large vessels in the anterior mediastinum.

It is only when the bronchial glands are the seat of tuberculous deposit, when at the same time tubercles are not present in the lungs, that the disease gets the appellation of *bronchial phthisis*. It is a disease peculiar to childhood, and is rare then, for generally cases beginning in this form soon run into true pulmonary phthisis.

PROGNOSIS. Recovery takes place in a few cases only: the rest are fatal, generally by progressing into confirmed phthisis pulmonalis.

DIAGNOSIS.—This is difficult, as explorations of the chest are with difficulty made in children's cases; it is difficult in them to distinguish this disease from true tubercular consumption.

Bronchial Phthisis is common after bronchitis, and its symptoms continue to appear. The cough assumes a paroxysmal character like that of whooping-cough. There may be œdema of the face and swelling of the veins of the neck, arising from the pressure of the bronchial glands on the vena cava. Respiration more or less hurried; loss of flesh observable, but with great fluctuations in degree.* Lymphatic glands of the neck frequently enlarged.

PHYSICAL SIGNS.—Pressure of enlarged bronchial glands on one of the bronchi may produce feebleness or suppression of the respiratory sound on one side. Dullness in the interscapular region on percussion; bronchial respiration remains in its ordinary site, the interscapular space behind, and in the neighborhood of the sterno-clavicular junction in front, and there it may be exaggerated. Mucous rales, and perhaps gurgling sounds in the same vicinity. If phthisis pulmonalis exist it will be recognized by the persisting cough, cinnaration, night-sweats, &c., characteristic of that disease.

In *simple acute bronchitis* there is generally disparity of resonance between the two sides on percussion; and the bronchial rales are less marked, but more manifest at the summit of the chest; less abundant expectoration; dyspnoea and increased frequency of respiration, greater than in ordinary acute bronchitis, but less marked, less dangerous, and the course of the disease longer than acute general capillary bronchitis.

ACUTE BRONCHITIS.

Generally not present, except diarrhoea, which may occur in the latter stages, when the tuberculization affects the intestines.

There is no eruption.

Accelerated breathing a marked feature, with dyspnoea more distinct and severe than in any case of typhoid.

No such preliminary stage. Mental symptoms less marked, appear later.

TYPHOID FEVER.

Has characteristic abdominal symptoms: as tympanitis, iliac tenderness, gurgling, diarrhoea.

The Typhoid eruption is positive when well marked; but is not always present.

This only present when it is complicated with pneumonitis, which physical signs should detect.

Preceded by a preliminary stage; mental characteristic phenomena appear early and are very prominent. Pulmonary symptoms only show themselves at a late period, not at the beginning.

* West on Diseases of Children, p. 283.

In that very rapid, and generally fatal form of phthisis, described as acute pulmonary tuberculosis, or tubercular pneumonia, the symptoms correspond to *Phosphorus*. Iodine or *Hepar-sulphur*.

Phosphorus in health produces emaciation, glandular affections, scrofula, hectic fever, night-sweat, falling off of the hair, dry and burning throat, hawking of mucus, chronic looseness of the bowels, aphonia, cough with rawness and hoarseness, cough with purulent expectoration, also of blood or tenacious mucus, heavy fullness and tightness of the chest, palpitation of the heart, pneumonia, phthisis.

TREATMENT.—Our principal remedies in this disease are, *Phosphorus*, *Iodine*, *Kali-hyd.*, *Kali-bichrom.*, *Bryonia*, *Kali-phosphite*, *Sanguinaria*, *Carbo-veg.*, *Hepar-sulph.*, *Calcarea-carb.*, *Ammonia-carb.*, *Senega*, *Mercurius-hyd.*, *Drosera*, *Belladonna*.

We have witnessed the best results from the first and second attenuations of these medicines.

Prussiate of Potash.—We find this remedy strongly recommended for phthisical catarrh and also in pulmonary tuberculosis attended with “excessive cough and expectoration; inordinate action of the heart and hectic fever.” (*Dr. Dutcher, Med. Reporter*, Vol. VIII., p. 408. *Lancet, Cincinnati*, Feb. 1862. *Dr. Smart, Maine Amer. Jour. Med. Sci.* No. 13.)

Permanganate of Potash.—This is a new remedy not yet well proved. It is the best of all known disinfectants and is believed to possess the depurative and other useful properties of other preparations of Potassa.

G E N U S V I.—S T R U M A .

1. SCROFULA.—KING'S EVIL.

This disease was described by the Greeks under the appellation *κοιραθες* from *χοιρος*, hog, and by the Latins *scrophules*, (from *scropha*, female swine.) This name had its origin in the well-known fact, that scrofula was a disease peculiar to the above-named animal.

The blood of scrofulous subjects has been found to differ materially from that of healthy individuals. In the former, there is a superabundance of serum and a deficiency of the fibrinous portion, and the solids which are generated from this blood are, in consequence, lax, feeble, and incapable of resisting exposure, fatigue and disease.

Scrofula is for the most part *hereditary*, but the physician is frequently presented with well-marked cases of the *acquired* disease. The circumstances which favor the formation of an original scrofulous dyscrasia, are: cold and damp habitations, want of healthy and nutritious food, constant confinement at labor in close and ill-ventilated

rooms, and finally, the use of *pork* in all its forms, as a principal article of food. Respecting this last cause, we submit to a few remarks: Since the time of Moses, a large portion of mankind have looked upon swine as an impure animal and unfit for food. Its impurity consists of a disorder of a purely scrofulous character which is inherent in this animal and peculiar to it, and is constantly being developed, especially during confinement and subjection to the ordinary modes of feeding.

Recent observations show that the new disease called *trichinasis* originates in the use of flesh of hogs, which, though appearing healthy, have in their flesh the germs of the living flesh-worms or *trichina*. When pork containing them is taken into the stomach the calcareous capsule which invests the parasite is digested: the flesh-worms are set free; and in one day or less they begin to multiply in vast numbers. They then irritate the mucous intestinal membrane, pierce the walls of the intestines and ultimately make their way to the muscular fibres which they eat and destroy. On one occasion in Germany all persons who ate of the sausages prepared from a single hog, "died the slow death of exhaustion from nervous irritation, fever, and loss of muscular power. No case was benefitted by medical treatment."

It is absurd to argue that flesh contaminated with the scrofulous miasm, can not communicate to the healthy body, after digestion, its morbid particles. The poison pervades every atom of the affected flesh, and no washing or digestion can destroy or banish the noxious quality.

Scrofula is most common in temperate latitudes, where the changes of temperature are abrupt, and where the atmosphere is much of the time loaded with moisture. The miasm operates upon almost every structure; glands, skin, ligaments, membranes, muscles, and bones, all succumb to its attacks.

Diagnosis.—The signs which are supposed to indicate the scrofulous habit, are: precocity of intellect; blonde hair; light complexion; blue eyes; soft and delicate cheeks; lips thick and red; "frequent swelling of the upper lip and nose," edges of the eyelids red and prone to inflammation; scurf and eruptions on the scalp; large head; sensitiveness to cold; ends of the fingers blunt instead of tapering; muscles soft and flabby; morbid sexual propensities. These marks are generally supposed to characterize the scrofulous habit, but it has occurred to us to witness far more cases of scrofula in individuals the very opposite of this description; but whether or not this is the result of accident or whether an erroneous impression has prevailed upon the subject we will not now attempt to decide. Amongst the most common and simple manifestations of scrofula may be ranked, *glandular swellings of the neck.*

These enlargements may occur very frequently during childhood, in the form of what are vulgarly termed "kernels," on different parts of the neck. They are excited into activity by taking cold, by currents of air upon the neck, by measles, scarlatina, and whooping cough, and either remain for a long time stationary and inactive, or run on to more violent inflammation and suppuration. These swellings sometimes attain a very large size, involving most of the glands of the neck, and remain in this condition for many years. More frequently, however, owing to injudicious allopathic treatment, the swellings are dispersed by external applications, the malady is forced to embody itself upon the lungs, and a fatal *phthisis pulmonalis* is the result.

The next form of scrofula to which we shall call attention, is that in which the joints become affected. The most important of these affections are the

2. WHITE SWELLING. (ARTHROCACE,) AND THE HIP-DISEASE.

The approach of these maladies is commonly gradual and insidious. Occasional pains are complained of in the diseased joint, after exercise; the motions of the limb gradually become impaired, and vague pains are experienced in the neighboring joints, which induce the belief that healthy parts are the seat of the inflammation. As the disease advances, the ligaments, cartilages, and other structures composing the joint become so much thickened by the inflammatory action, that the limb after a time becomes stiff, and the joint immovable. In some instances the inflammation is arrested at this point, the suppurative process is prevented, and a recovery by what is called *ankylosis*, takes place. But in the majority of cases the disorder proceeds on to suppuration, the whole structure of the joint becomes involved in this action, a profuse discharge of matter takes place from the part, constitutional disturbance is manifest in the form of emaciation, debility, night-sweats, and other symptoms of hectic fever, and the patient soon succumbs. Scrofulous affections of the joints are very difficult of detection in their early stages. The pains are so vague and indefinite, as scarcely to attract attention: there is little or no swelling or discoloration over the disordered part; and there is no derangement of the general health which indicates that the organism is suffering under a serious malady. It is for this reason that the disease is allowed to make serious progress before its true nature is suspected. Like its near relative, the consumption, it strikes silently, but deeply and fatally. See p. 176.

Another scrofulous disease, common in infancy, is known as

3. STRUMOUS DISEASE OF THE MESENTERIC GLANDS.

The characteristic signs of this malady, are: Wasting of the limbs, pale and alternated appearance of the skin, tumefaction and tenderness of the abdomen, sunken eyes; irregular state of the bowels, variable appetite, passage of partially digested food, general irritability. After the disorder is seated, the process of absorption is suspended, so that only a small amount of nutriment arrives at the blood, and the sufferer is soon reduced to that condition which medical men recognize as *marasmus*. See Vol. I., p. 884, 890.

Although the mesenteric glands sometimes suppurate, yet much more frequently the victims to mesenteric disease die from actual starvation.

The only hope of cure in these cases is in a detection of the malady at its onset, and the services of a thoroughly competent physician.

In a previous chapter we have already treated of another, and perhaps the most dangerous form of scrofula, under the head of *phthisis pulmonalis*, or *tubercular consumption*, to which we refer the reader.

There are other scrofulous affections of the different parts of the organism, as the brain, the liver, the skin, the spleen, and the spinal marrow. The Index under proper heads may be consulted with reference to this subject.

Hahnemann has included scrofula as a form of psora, but evidently on insufficient grounds. Psora is contagious, scrofula non-contagious. The matter of psoric eruption is capable of communicating its similitude by inoculation; that of scrofula is innocuous when inoculated. Psora, in its specific development upon the skin, assumes the appearance of a vesicular eruption; scrofula makes its appearance in the form of extensive ulcers, abscesses, &c. The psoric miasm exercises its specific affinity upon the skin; the scrofulous miasm upon the glandular system. Psora is no respecter of persons, but attacks all constitutions, temperaments, and organizations alike; scrofula is supposed to select its subjects from those who are daintily formed, and possess peculiarities of organization; psora is readily cured by anti-psorics; scrofula always requires much time, and is often absolutely incurable by any course of treatment. Psora can not be artificially acquired, by any particular mode of life, or any particular food: with scrofula it is the reverse. Finally, the development of the psoric miasm, when it is clear and apparent, is always specific and uniform, viz: in the vesicular eruptions of a peculiar appearance upon the surface, and the malady is unequivocally contagious; while the development of the scrofulous miasm is subject to very great variations, but for the most part attacking the glands, rather than the skin, and decidedly non-contagious.

Causes.—The scrofulous habit is, in most instances, inherited. In its hereditary subjects we may notice from birth radical unsoundness of constitution, an irritability, sensitiveness to slight exposures, proneness to catarrhal difficulties, and an inability to resist diseases, which is non-apparent in healthy children. The *acquired* scrofulous habit is generally amongst the poor, who are ill-fed, clad, and housed. We have before alluded to the causes which especially induce this variety of the disease; they are also the chief *exciting* influences of the *hereditary dyscrasia*. Atmospheric vicissitudes, abuse of stimulants, venereal excesses, masturbation, intestinal irritation, excessive mental and physical occupation, scarlatina, measles, abuse of mercury, iodine and other drugs which unduly stimulate the glandular system, also excite the latent disorder.

TREATMENT.—It has been observed that scrofulous persons are peculiarly sensitive to *cold*, and that abrupt changes from heat to cold, in a moist region, are especially calculated to call into active operation the latent malady. For this reason it behooves those who are liable to this affection, whether by hereditary or acquired predisposition, to dwell, if possible, in a warm and equable climate. When the lungs become affected, this course will often be necessary in order to save life. In all scrofulous diseases, too much stress can not well be laid upon the importance of a mild, dry, and uniform temperature.

The food of scrofulous subjects should always be of the most nutritious character, in order that a due proportion of fibrine may be introduced into the blood. Fresh meats, like beef, mutton, venison, fowls, and veal should constitute the principle articles of food; and bread, rice and other farinaceous substances should be made to take the place of watery and succulent vegetables. Porter, ale, and light wines may also be used moderately with advantage.

Much exercise in the open air is also essential. In taking exercise, it is of the utmost importance that the mind should be agreeably occupied, for if we walk or ride as a task, we shall obtain very little benefit.

Bathing, both in fresh and salt water, is also a means of securing a healthy action of the skin, and of imparting tone and vigor to the whole system.

The clothing should always be adapted to the season, and in temperate and cold latitudes we strongly advise the buckskin wrapper to be worn over thin linen, silk, or Canton-flannel under-shirt. We commend the use of these garments during the winter from personal experience. Vol. I., p. 197.

The remedies most deserving of confidence in the treatment of scrofula, in its various forms, are: *Sulphur*, *Hepar-sulph.*, *Mercurius*, *Iodine*, *Baryta*, *Dulcamara*, *Conium*, *Belladonna*, *Lycopodium*, *Sepia*.

Calcarea-carb., Rhus-tox., Aurum-muriaticum, China, Ferrum-iodide, Mercurius, Oleum-jecoris-aselli.

Sulphur.—Scrofulous ulcers on different parts of the surface; humid eruptions behind the ears; purulent discharges from the ears; scrofulous ophthalmia of children, with eruptions about the eyes, and ulcers on the cornea; chronic enlargement of the tonsils; enlarged ovaria; swelling of the axillary glands; swelled nose; frequent nose-bleed; swelled upper-lip; swelling of the glands under the lower jaw; enlargement and suppuration of the inguinal glands; swelling of the posterior cervical glands; white swelling of the knee; emaciation; chronic inflammation of the eye-lids; scrofulous ophthalmia, attended with great intolerance of light, and sense of fullness and distention of the lids; pulmonary cough, with sticking pains in the chest, and copious purulent expectoration; inflammation and pain in the knee and hip-joints; itching pimples upon the scalp, and pain at the roots of the hairs; stitching pains in the ears and in the parotid glands; painful swelling of the upper-lip and *alæ* of the nose; pain in the region of the liver after exercise; pain in the abdomen on pressure, and in the inguinal glands; sensation of weariness and fatigue in all the limbs; want of vitality, sensitiveness to cold; pains worse during cold weather; despondency, alternating with gaiety; irritable, insolent and discontented.

ADMINISTRATION.—One grain of the third trituration every twenty-four hours, until the beneficial effects are visible.

In the treatment of scrofula, as in all chronic diseases, we generally succeed best with the remedies given in the higher dilutions and repeated at longer intervals than we usually depend on in acute cases. On this point Dr. Lutze says:

"In cases of *chronic diseases*, or diseases which run a long course, have existed for years, and deeply taint the organism, as deafness, blindness, gout, paralysis, old eruptions, open sores and old ulcers, fistulæ, herpes, curvatures of the back and bones, caries of the bones, *the medicine should never be frequently repeated, nor should the same medicine be given twice in succession.* Each dose should be allowed sufficient time to develop its full effect, since it is the subsequent action of the drug that achieves a cure."

In such cases the practice of the author now is to *dissolve "three to five pellets of the 30th potency in a cupful of fresh water, of which I give a swallow morning and evening for four or five days, after which I allow the medicine to act for three or four months, sometimes even for five or six months, or even longer, if the improvement continues:* if it should cease, and three months should have elapsed, I then give another remedy.

"The reason why I do not give another remedy under three months

(except in case acute symptoms supervene,) is, because I have noticed that the primary action of the drug is sometimes not developed under two or three months, after which a cure takes place, which could not have been accomplished if I had not waited a sufficient length of time to allow the medicine to manifest its full action, or if I had interfered with it by the untimely repetition of the dose.

"The curative process should not be viewed as materially as it very frequently is. *The properly-selected remedy starts the cure, the natural curative power finishes it.*"

Sulphur.—*Case by Dr. Lutze.*—"Mr. H. from Holstein. Age 40 years. Almost constant pain in the left side of the chest; frequent yawning, sneezing and eructations. Occasional pain and swelling in the pit of the stomach, empty eructations when pressing upon this region. Deaf of the left ear from his infancy. Swelling at times of the left cheek, at other times of the mouth, nose and eye. Stiffness in the nape of the neck. Drawing pains in the left thigh. Weakness of the stomach and nerves. In former years, inflammation of the glands and lungs. He had the itch when young, which had been removed with an ointment. I sent him four powders, to be taken in eight weeks. No. 1 containing four pellets of Sulphur 30, which were to be dissolved in a cupful of water, a swallow to be taken morning and night for four days. After eight weeks the following report was sent to me: A few weeks after taking the medicine, all the symptoms grew worse, but in three weeks a general improvement set in. The left ear began to discharge again, which had not been the case for years, and the flatulence and pains in the chest have abated, so that the patient feels much better. I sent four powders of Sugar of Milk, for the effect of Sulphur now first began to show itself. The next report being still more favorable, I continued the non-medicinal powders. Twelve months after the commencement of the treatment, I received the following report: 'The hearing of the left ear, which had been deaf these thirty-two years, is restored, and I am cured, except a small swelling near the left eye and some stiffness of the nape of the neck.' Another non-medicinal dose completed the cure. *One dose of Sulphur 30 did all this in the space of four months.*"

After some other cases as strong or stronger in the testimony they give in favor of the principle contended for by Dr. Lutze, he thus concludes this section:

"These cases show that no second dose of a remedy should be given as long as the first dose has not exhausted its action, and in cases where no effect is observed, as in case of deaf and dumb patients, we allow a dose to act at least for three to five months; since it is impossible to know what is going on in the interior of the organism, and it is so easy to injure the salutary action of a drug by the untimely exhibi-

tion of another remedy of which we have had repeated instances in the case of externally perceptible ailments."

Iodine.—Hahnemann (Chronic Diseases Vol. II.) says: "Iodine is particularly indicated by the following symptoms: Dizziness in the morning; beatings in the head; smarting in the eyes; buzzing in the ears; hardness of hearing; coated tongue; salivation; taste of soap in the mouth; sour eructations with burning; heartburn after eating heavy food; canine hunger; nausea; shifting of flatulence; meteorism; constipation; wetting the bed; delay of the menses; cough; old morning cough; difficulty of breathing; external swelling of the neck; lassitude of the arms in the morning, in the bed; numbness of the fingers; distortion of the bones; dryness of the skin; night sweat." Teste says, these are only the secondary symptoms of Iodine, and that the primary ones are exceedingly similar to Ipecac. The effect of excessive doses may be seen in a case given by Dr. Gairdner in a work on Iodine: A young English lady had bronchocele for which Iodine was prescribed. For a time the action was favorable and the tumor was diminished; but a gnawing pain commenced in the stomach; great oppression and anxiety. The remedy was pressed further. In a week she became emaciated; there were vomiting, pain in the abdomen most severe; thirst distressing; alarming diarrhoea; excruciating pain in the stomach; violent cramps and convulsive actions of the muscles, arms, back, and legs; vomiting and purging of feculent, thin, bloody, slimy, or dark green matters, streaked with blood; tongue loaded with thick crust of the same color; countenance pale, contracted with peculiar expression, denoting abdominal suffering; pulse small, hard, frequent, scarcely to be numbered; inability to swallow. She was only relieved by repeated warm anodyne embrocations to the pit of the stomach and feet; hot bath. For ten days she had frequent attacks of diarrhoea, with intense abdominal pain; arms and body became almost fleshless; the breasts, which had been large, were almost flat; calves of the legs almost disappeared; thighs little larger than the wrists in health. Dr. Gairdner says, he never before saw such rapid and complete emaciation; and the French nurse exclaimed "*de Charnee!*" She was subject to relapses for many months, with frequent, violent spasms of the stomach. Her nervous system was so deranged that she never enjoyed one hour free from the most wretched depression of spirits.

A work by M. le Dr. Labourdette, shows the therapeutic advantage of the milk of animals, medicated by digestive assimilation, in passing certain drugs in an infinitesimal form through their bodies. This work was discussed in the French Academy of Medicine, April 26, 1859, in the course of which M. Troussseau proclaimed the dynamic action of drugs and showed that their curative power in the smallest doses was not dependent on contact of the drug in its crude form with the living organ-

ism. Iron, he said, was now known to be only assimilated in infinitesimal proportions, and was chiefly useful in stimulating the assimilative organs to help themselves from the common food; that milk from a cow or nurse will act by virtue of dynamic properties, imparted by the general state determined in the animal, irrespective of the quantity of mercury which it contains. M. Chatin gives in the *Gazette des Hopitaux* cases of goitre, cured by the administration of vegetables, containing Iodine, after Iodine in a crude state had failed.

MARASMUS.—*Iodine*.—M. Grange having advised the use of iodized food for goitrous patients. M. Rilliet of Geneva, where goitre is very prevalent, made a trituration of Hydriodate of Potash, to be given in the food in the proportion of one part to a thousand, which was supposed to be perfectly innocent; and thus seasoned the food of those for whom he prescribed. But he soon found unsatisfactory results.*

“Two ladies, past 60, and a gentleman, past 45, belonging to different families,” were attacked by “emaciation, palpitations, accelerated pulse, general trembling, great nervous mobility and diminution of strength.” M. Rilliet had forgotten his iodized food, and was perplexed. Was it “incipient heart-disease, latent diabetes, or a chloro-anæmic state, due to causes undetermined?” He had seen similar symptoms follow the use of Hydriodate of Potash, in doses of $\frac{1}{5}$ of a grain daily; made out the nature of the new disease; and cured his three patients in the course of several months. One relapsed by going to the seaside, came near phthisis, and recovered after a country residence and drinking asses’ milk. Another lady near 60, by a short residence on the seaboard, “returning to Geneva, she was excessively thin, her pulse at 130, and her nervous system highly excited. She recovered in two months under change of air and drinking asses’ milk. These two patients had taken no Iodine, and must have inhaled it in the sea air. M. Rilliet concludes in opposition to the authors who had recommended iodized food:

1. “That the long-continued absorption of small doses of an iodized salt, whether mingled with water, air, or food, is not free from danger.
2. That the inhabitants of certain localities are more than others exposed to iodic intoxication.” 3. That this special susceptibility depends on the Iodine in the air, water, or aliments furnished in these places.
4. That iodic poisoning is more to be dreaded when given in small than in large doses.
5. That these results are more to be feared in persons advanced in life; and when Iodine is taken by persons past the fortieth year, it should be suspended on the first symptoms of saturation. These symptoms are: “Canine appetite, emaciation, palpitations, nervous susceptibility.”

Dr. Rilliet might have saved himself and his patients some trouble

* *Gazette Hebdomadaire.*

by studying the pathogenesis of Iodine long ago, given by Hahnemann : " Over-excitement of the whole nervous system; ebullition of blood and pulsations over the whole body, increased by any effort; trembling, tottering gait; great debility; atrophy; extreme emaciation; general oedema. Pulse accelerated, hard and small; consumptive fever; variable appetite—either excessive or absent; digestion very feeble; dyspepsia; suffocation; is blown on going up-stairs, with violent palpitations and cramp-like pains about the heart on the least effort."

EXERCISE.—Muscular Motion.—This being a disease in which the lymphatics are specially implicated, and these vessels having no central organ of impulse, like the heart, to propel their contents forward, the support given to their walls by the feeble tissue surrounding them is but small, and some additional aid to propel the fluid is necessary. The lymph itself is imperfect, arising from imperfect nutrition; and all these circumstances conspire to cause stagnation in the lymphatic vessels, and those glandular enlargements characteristic of scrofula. Muscular contractions, when not accompanied by nervous exhaustion, propel the lymph forward and toward the general current of the venous circulation. The walls of the lymphatics are supported by the tonicity of the adjacent tissue; and the lymph itself is more perfect, because the functions of the muscular and glandular systems are more perfectly performed.

ANIMAL MAGNETISM.—This disease was called centuries ago the "King's Evil," because it was believed that the sovereign was imbued with a peculiar virtue, by which he could cure it by the laying of his hand on the diseased person. The first king of England who was supposed to have this virtue, was Edward the Confessor.† The power was transmitted to his successors. In the reign of Charles the Second, in the course of fourteen years, no less than 92,107 patients were touched by the king's hand; and according to Dr. Richard Wiseman, Sergeant Surgeon to the king, the most of these were cured or benefitted.‡

The power of Edward the Confessor to cure scrofulous disease by the "laying on of hands," was so fully believed in by the people of England that Shakspeare introduces it as a feature in that monarch's character in the tragedy of Macbeth. (Act IV., Vol. I. p. 334). Malcolm inquires of the doctor:

"Comes the king forth, I pray you ?
Doctor. Aye, sir : There are a crew of wretched souls
 That sir : his cure. Their malady subdues
 The great essay of art, but at his touch,
 Such sanctity hath Heaven given his hand,
 They instantly amend.
Malcolm. I thank you, Doctor.

* *Materia Medica Pura.*

† *Million of Facts.*

‡ " *Surgical Treatises on Tumors, Ulcers, &c.*"

MacDuff. What is this disease he means ?

Malcolm. "Tis called 'The Evil' !

A most miraculous work in this good king :
 Which often, since my here-remain in England,
 I have seen him do. How he solicits Heaven
 Himself best knows ; but strangely visited people,
 All swollen and ulcerous, pitiful to the eye,
 The mere despair of surgery he cures ;
 Hanging a golden stamp about their necks,
 Put on with holy prayers. And 'tis spoken,
 To the succeeding royalty, he leaves
 The healing benediction. With this strange virtue,
 He hath a heavenly gift of prophecy ;
 And sundry blessings hang about his throne
 That speak him full of grace."

Rhus-tox.—External indications : Tinea capitis ; soft tubercles on the hairy scalp ; scrofulous ophthalmia, with photophobia, and an eruption about the eyes ; chronic swelling and induration of the parotid gland, the axillary, and other glands ; enlargement of the bones ; herpetic and moist or dry scurfy eruptions in different parts of the body ; swelling and other signs of inflammation in the hip and knee-joints.

Pain in the hip-joint, increased on pressing the trochanter major, and attended with the shortening of the limb, and alternating pains in the knee ; pains of white-swelling, and scrofulous affections of the ankle-joint ; scalp painful to the touch, or from moving the hair backwards ; inflammation and tenderness of the edges of the eye-lids ; eyes sensitive to light ; eye-lids itch and feel swollen ; crusty eruption in the nose, and about the mouth ; repugnance to bread and other food ; stitches in the side ; short, or anxious, and painful cough ; oppression of the chest ; glandular swellings, painful when touched ; stiffness and lameness of the limbs ; very sensitive to the open air ; pains worst during inaction, or in the cold air.

Ill humor ; languor ; disinclination to all mental or bodily exertion.

ADMINISTRATION.—A drop of the third dilution each day, as long as may be seemed necessary.

Iodine.—Enlargement of the cervical parotid, thyroid and tonsil glands : scrofulous inflammation of the knee, with swelling, heat, and redness ; elongated and enlarged uvula ; induration of the os uteri ; glandular indurations in different parts of the body ; rough and dry skin ; general emaciation ; hectic appearance.

Physical Sensations.—Catarrhal affections of the mucous membranes depending on scrofula ; swelling and pain in the liver ; inflammation in the knee, with stitches and burning, and increased pain on motion of the joint or from pressure ; contraction of the œsophagus from enlargement and inflammation of the glands and mucous mem-

brane, with stitching pains during deglutition; enlarged mesenteric glands; tumid abdomen with pains on pressure; swelling and pain in the bronchial glands; glandular swellings about the neck and axilla, painful, especially on pressure; itching and pimples on the arms and chest; general debility; hectic fever; pains aggravated by exercise, by contact and by warmth. Nervous irritability and increased sensitiveness to external impressions.

Administration.—Same as *Rhus*.

Baryta-mur.—Chronic induration of the cervical glands; scrofulous eruptions and ulcerations; *tinea capitis*; enlargement of the liver, of the testes, and of the mammae; chronic inflammation of the eyelids.

Physical Sensations.—Itching eruptions of the scalp; general emaciation and debility; scrofulous disease of the throat, aggravated after cold; scrofulous affections of the ears, attended with throbbing and itching, and discharge of purulent matter; inflammation and suppuration of the tonsils; pains in the affected joints and in the long bones; liability to sore throat after every cold; disease of the mesenteric glands in children; pains, mostly on the left side, when sitting, and relieved by exercise in the open air; adapted to old men and young children. Imbecility; absence of mind; impaired intellectual powers.

Administration.—The second or third attenuation may be given—a dose daily—until the requisite impression is produced.

DULCAMARA. — *External Indications.* — Moist and suppurating herpes, forming crusts, or scurvy, branlike eruptions; swellings of the cervical and submaxillary and inguinal glands; swelling of the calf of the leg; emaciation; scrofulous inflammation of the eyelids.

Physical Sensations.—Pains in the enlarged glands, particularly on motion; great susceptibility to cold; pains in the joints on exposure to cold; pains worse during rest; paralysis of the upper eyelids; phthisis pulmonalis, before the tubercles commence softening; pulmonary symptoms brought on by repeated colds; pains in the chest; febrile symptoms; lassitude; bruised sensations. Disposition restless, angry, and quarrelsome.

Administration.—In the same manner as *Baryta*.

Conium-maculatum.—Swelling, induration, and suppuration of the external glands; malignant scrofula; caries of the bones; scrofulous photophobia; diseased mesenteric glands in children; enlargement and induration of the liver and pancreas. Scrofulous swellings, which evince a disposition to run into schirrous degenerations; pains in the bones and in the malignant ulcerations; inflammation, swelling and pain in the ovaries; painful swelling of the uterus; pain in the region of the liver, when walking; purulent expectoration from softened tubercles; intolerance to light, in consequence of scrofulous ophthalmia; dull pain in the knee, when stepping; bruised and sore feeling in the calves of

the legs; pains worse during rest and in the night. Dullness of intellect; want of memory; irritability.

Remarks.—For indurated glands, Dr. Johannsen asserts that “*Conium* in the second dilution stands highest as a remedy, and next to it *Mercurius-solubilis*.”

Clematis-erecta.—(Bœnninghausen) *Clinical indications for this remedy*:—Indurations, resulting from inflammation; glandular indurations of inguinal glands; of the testicles; of the penis; of the urethra; interrupted emission of urine; purulent urine; purulent deposit in the urine; general eruptions; squamous exanthemata; squamous tetter; herpes, with shooting pains; horror of bathing one's-self; exacerbation from application of lotions (in diseases of the skin); the same from warm fomentations.

Clematis is particularly suited to persons of mature age, to those of florid complexions; of relaxed, cachectic, and scrofulous constitutions.

Administration.—We advise the third attenuation—a dose daily until its effects are apparent.

Belladonna.—Glandular swellings, with suppuration; ulcers; emaciation; inflammation and swelling of the bones; eyelids inflamed; ulcers upon the cornea; photophobia; swelling of the lips, nose, tongue, uvula, tonsils; bleeding at the nose; swelling and spongy gums. Inflammation and pains in the enlarged glands, and in the periosteum and bones; diseased mesenteric glands, with atrophy; inflammation of the eyes, with heat, redness, and great intolerance to light; pain in the ball of the eye; double vision; roaring in the ears; painful swelling of the parotid gland; soreness of the throat; impeded deglutition; lameness of the limbs, when moved; smarting and burning pains in the hip-joint, increased by contact or motion, and during the night; painful ulcers on the skin; sensitiveness to cold air; adapted to the scrofulous affections of children and females of a mild temper. Irritability; amorous, nervous, excitable, talkative.

Administration.—Same as *Conium*.

Lycopodium.—For the scrofulous dyscrasia, and especially where the periosteum, bones, and cervical glands are affected. This remedy is adapted to lymphatic constitutions.

Sepia will be found an efficacious remedy in scrofulous females who are troubled with irregularities in the menstrual functions. It has been employed successfully in indurations of the uterus, corrosive leucorrhœa, and in pulmonary phthisis with profuse purulent expectoration.

Calcarea-carb.—According to Hahnemann, Carbonate of Lime is indispensable in those cases where the menses appear too early and are too profuse. It is also appropriate in young persons of scrofulous habits. In children presenting the usual marks of the scrofulous dyscrasia, it is one of our most valuable remedies. It is highly recom-

surrounding tissue becomes denser, the capsules almost disappearing. The minute vessels of the capillary system become encrusted with calcareous matter. (*Ecker.*)

2. PARENCHYMATOUS BRONCHOCELE.—This consists of hypertrophy of the thyroid gland, properly, an abnormal development of the glandular capsules distended by a gelatinous fluid. Dr. Bach found some capsules containing within them others, the inner being separated from the outer one by a fluid, and being formed of cells like those constituting the normal contents of the capsules almost all containing a nucleus some enclosing one or more young cells. The centre of the capsule appears hollow and contains young capsules. When these are a half millimetre in length they are already diseased. Gelatinous substance enters the capsules by endesmosis and distends the anhistous membrane. The young capsules are formed of cells by endogenous generation, and are clothed later by an anhistous membrane. The young cells of the young cysts only acquire nuclei at a later period. Rokitansky says, the thyroid gland is endowed with great powers of reproduction. This hypertrophy of this gland is often endemic; it may exist at birth. The child respires long and deeply, with a feeble plaintive tone, heard at considerable distance; expiration is painful; drinking may be impossible. Bach saw a child suffocated by the pressure of the external part of the gland so far as to produce irritation on the pneumo-gastric nerve. A symptom indicating this was the excretion of an enormous quantity of bronchial foam. He thinks some cases of thymus asthma are due to a posterior development of the thyroid.

TREATMENT.—Aconite in acute cases; in chronic enlargement of the gland give Iodine, Iodide of Potash, Calcarea.

3. TRANSFORMATIONS IN THE STRUCTURE OF THE THYROID TISSUES.—The *stroma* of this gland is a fibro-cellular tissue in which ramifies a net-work of blood-vessels. It is liable to be changed in part into fibrous tissue, and its primordial texture is the same as that of normal fibrin. One of the characters of accidental fibrous tissue is its *retractibility*; it may also undergo the fatty, osseous, or cretaceous (chalky) transformation. Air may also be effused amidst the cellular tissue, and other new products may be there developed.

a. *Cellular Goitre*.—Hildenreich saw a goitre which grew very rapidly in a man aged sixty. It consisted of cells irregularly shaped, some of their cavities intercommunicating, and their walls containing cartilaginous or osseous matter, and consisting mainly of new fibrous tissue. The fluid within them was serous, gelatinous, and bloody. The glandular element was not visible.

b. *Emphysematous Goitre*.—Larrey's "*aérien*." It is produced by rupture of some portion of the air-tube.

c. *Cystic Goitre*.—A cyst is developed in the midst of the normal

elements of the thyroid gland, and contains new fluid or solid formation. It may originate from a pathological blastema, inflammation, the transformation of an apoplectic coagulum, or the degeneration of glandular capsules.

Scirrhus, Encephaloid, tubercle, and hydatids of the thyroid have not yet been proved to exist, though Larrey, and others, have described some of them. The walls of the cystic goitre consist of a layer of cellular tissue amidst which fibres are deposited. New vessels are developed within the walls, and its internal surface is lined with epithelium. Posteriorly the walls are very thin and transparent. The vessels pressing the wall forward become weakened and are often ruptured from evacuation of the cell-fluid. The wall may pass into a state of cartilage, (enchondroma,) and in the course of years may become ossified. The contents of the cyst may be: 1. Serum from blood effused, or endesmosis; but it contains no fibrin, is incapable of organization, but may be absorbed. Other products may be formed as the serosity disappears,—such as crystals of cholesterine, and salts of lime. 2. Colloid matter, a colorless or yellowish gelatinous mass, containing no cells. (*Bach. Mem. Imper. Acad. Med.*)

CAUSES.—Bronchocoele is an *endemic* disease, being remarkably prevalent in certain localities, as Derbyshire, England, and the deep damp valleys of the Alps. But the precise physical peculiarities of these localities has not yet been ascertained. It is not confined to certain elevations or latitudes, and has been observed in every climate in both hemispheres. Its origin is usually ascribed to the water used by the inhabitants of the region where it most prevails. Popular belief refers goitre to the use of *snow-water*, and we have seen the goitrous tumor enlarge during the use of snow-water in winter; but certain fountains and rivers are more notorious as sources of this disease, of which the Saskatchewan river, in British North-America, is one of the most remarkable. Dr. Richardson attributes its influence to the presence of magnesian lime-stone, which he found in that river. (*Narrative of Franklin's Expedition to the Polar Sea, &c.*) Dr. McClelland has endeavored to show, that goitre in India is everywhere found in the localities in which the water is impregnated with carbonate of lime. In the United States we find lime-stone water in every part of many states, and in almost every locality we meet with cases of enlarged thyroid gland. They are more common in women, and especially those subject to ovarian activity.

TREATMENT.—At a moderately early period of this malady, we entertain no doubt, respecting the entire success of an expert homœopathic treatment. The influence of minute doses of carefully selected remedies, over these glandular enlargements, is often truly astonishing. But to prove most efficient the higher potencies must be employed.

The principal remedies are: Iodine, Calcarea-carb., Kali-hyd. Merc.-hyd., Hepar-sulph., Arsenicum-hyd., Kali-brom., Sepia, Silicea, Bromine, Conium, Spongia.

We usually prescribe Iodine, Calcarea, Hepar, Arsenicum, Sepia, Silicea, Conium and Spongia in the high attenuations repeated at long intervals. Kali-hyd., Kali-brom., and Mercurius-hyd., at the first and second triturations, and the dose repeated two or three times a day.

Iodine.—Its best powers are displayed in causing the absorption of the products of exudation, and of capsules in process of transformation into colloid matter. It never causes the absorption of voluminous cystic goitres containing colloid matter; it exerts no action on those cysts containing serosity, or such as have undergone tertiary transformations. It has no effect upon cellular goitre or in that accompanied by carcinomatous or other morbid products.

Iodine may be expected to be successful in dispersing "the parenchymatous cystic goitre, on condition that this is principally due to the degeneration of the capsules, and that the vascular element does not predominate." (*Mem. Imper. Acad. de Med. Paris*, 1855.)

Dr. Henderson said in his first edition, that Iodine was known as a remedy for goitre before it was known to be capable of causing it; and homœopathists prescribed it as a homœopathic remedy, "because they believed, and had no doubt that experience would ultimately prove that its curative action was dependent on its capacity to produce the disease; though the circumstances necessary for such a pathogenetic effect have not yet been discovered." In his second edition he says: The expectation expressed in his former edition has been fulfilled. A man taking five grains of Hydriodate of Potash twice a day, after eight days became affected with "a rapidly growing swelling of the thyroid gland." (*Brit. Jour.*)

Spongia.—In the thirteenth century roasted sponge was employed in this disease by Arnold de Villeneuve. It is used homœopathically for the following symptoms: Moral and physical debility; tendency to start; *paroxysms of anguish*; sense of weariness in the upper portion of the body, and numbness in the lower portion; alternate sadness and mirthfulness; fever with shuddering in the back and coldness all over, followed by dry heat, or accompanied with sweat; dryness in the day-time; sleep full of dreams and fantastic visions, which sometimes continue after waking; frequent waking with a start; itching of the skin, as if sweat would break out; red spots; rush of blood to the head; vertigo as if one would fall sideways or backwards; oppressive headache, at the top of the head, at the occiput or temples; stitch in the temples; oppressive pain in the forehead from within outwards fullness of the head, with heat, which is perceived by the hand, and sometimes sudden flow of saliva; semi-lateral headache; sensitiveness

and itching of the hairy scalp; stitches in the eyes; redness and burning of the eyes; lachrymation; heaviness and nightly agglutinations of the lids; myopia; constrictive otalgia; retention and thickening of the nasal mucus; nose-bleed; pale face, with sunken eyes and anxiety in the features; crampy pain in the articulations of the jaw; blisters at the edges of the tongue, and in the inner surface of the cheeks; stitches in the throat; pricking sensation above the throat-pit; induration of the submaxillary glands and of the thyroid body; sickness at the stomach; sensation of sickness and faintness at the stomach, as if one had drunk a quantity of warm water; sour regurgitations; vomiting; constrictive pains at the stomach; pinching in the abdomen. Cutting colic after a meal; crampy pains in the groins; swelling of the inguinal glands; diarrhoeic stools, with tenesmus; hard stools; formication in the rectum; smarting at the anus; increase of the urinary secretion; urine with a white yellow or grayish sediment; crampy pain in the testicles; induration of the testicles; premature and profuse menses. Great dryness of the larynx with short and barking cough; embarrassed breathing as if the larynx and trachea were narrower; pain at the larynx when touching it; hoarseness, dry, hollow, wheezing cough, worse in the evening; excited by a sense of tickling and burning in the larynx and trachea; crampy pains in the whole chest; vascular excitement on the chest on performing the least movements, with dyspnoea; anxiety, nausea and weakness, as if one would faint; anxious pain on the region of the heart; crampy pain in the cervical muscles; stitches in the shoulder-blades; wrenching pains at the shoulder-joint; bearing down at the elbow; drawing stitches in the fore-arms and hands; swelling of the hands; numbness at the end of the fingers; twitching of the glutei muscles; acute stitches in the thighs, above the knees and in the feet; stiffness of the lower extremities.

Spongia acts for several weeks, and is still more than Iodine a specific for goitre; Hahnemann says: (*Materia Medica Pura*, Vol II.), "The particular swelling of the thyroid body to which the name goitre is given, and which is peculiar to the inhabitants of low valleys and the adjoining plains, depends upon a conjuncture of circumstances, which, although mostly unknown to us, yet seem to remain pretty much the same, and for that reason, constitute a disease which remains essentially the same, and against which a drug which has once effected a cure, ought to show itself efficacious, it would seem in every case." Teste says, he found many cases of goitre to resist Spongia, and he treated them with Ipecac, Iodium, and Bromine.

Camphor is said to antidote Spongia.

Calcarea.—As we have seen that calcareous waters cause goitre, it is also found to be a remedy. A case of diarrhoea of eighteen

months' duration in a child, in which physical development was considerably retarded was cured by Calcarea 30. Another rickety child was transformed into a healthy one by taking pounded egg-shells mixed with the food. Other cases might be given.

Case by Dr. Croserio :—“A boy aged fifteen, extremely scrofulous, was stunted in his growth, and very thin. His limbs were slight, and his head too large for his body. He suffered from violent headaches when attempting to make any mental exertion. He was very timid, afraid to be alone in the dark. Two doses of Calcarea, after one of Sulphur, at the interval of four or five days, between the doses, brought about so favorable a change that in six months he gained great increase of height and strength as well as size of limb.

“The specificity of Calcarea on the system of nutrition indicates its general usefulness during the general period of development, and in diseases accompanied by excessive emaciation or obesity.”

Ipecac.—Dr. Teste gives occasional doses of Ipecac, with marked success in the treatment of goitre. For aggravations caused by it he regards Veratrum-album as the best antidote.

5. CRETINISM.—STRUMA TYROLENSIUM.—CAGOTISM.

DESCRIPTION.—Imperfect formation or development of the body, especially of the cranium; mental imbecility and physical deformity in various degrees; the organic or vegetative functions remaining in full activity; goitre present in some cases, though not in all.

The stature of the cretin is seldom above four and half feet, generally less; cranium deformed and of a conical shape,—the forehead being thrown backwards, narrowed and flattened; frontal sinuses large; the occiput nearly on a line with the neck, as in ruminating animals; flesh soft and flaccid; face broad and short; skin wrinkled, yellowish or pale and cadaverous, dirty, and covered with chronic eruptions; the ears large, standing out from the head; the tongue is thick, hanging out of the mouth, which is large, open and slavering; the lower jaw elongated strong and prominent; eyelids thick; eyes red, small, but prominent, watery, far apart and squinting; pupils contracted but not sensible to light; nose flat; and the whole countenance is idiotic, void of expression, or expressive only of lasciviousness; the chest is narrow; the abdomen and mammae large and pendulous; the neck is short and thick or long and thin; limbs crooked, short, distorted; the lower limbs shorter than the upper; fingers long; the gait imperfect and waddling. The senses are generally defective, hearing and speech imperfect; intellect absent or only partially developed;cretins are in all respects slovenly sensual, gluttonous and beastly. They die early, generally be-

low the age of thirty, before which time they present the appearance of advancing age.

CAUSES.—Cretinism, like goitre, depends for its origin on *endemic causes*. In the deep, narrow, damp, malarious valleys of the Alps, the people reside in small filthy houses built up under the ledges of the rocks; in those which are most filthy, hot and close in the narrow ravines of the Valais, one of the Swiss cantons, where the air is stagnant, and the rays of the sun are intercepted or reflected from the mountains, cretinism and goitre appear in their most intense forms. "As we ascend the neighboring mountains cretinism disappears and only goitre is seen. When we reach a certain altitude, or above 3000 feet, both maladies vanish." The principal cooperating agencies which aid in producing the disease are: poverty, bad food, drunkenness, indolence, sensuality and low debauchery of the parents, which naturally result in the infirmity of their children. The water in regions where cretinism prevails, contain calcareous and other mineral substances in solution; and cretinism, as well as goitre are to a considerable extent pathogenetic effects, or drug diseases produced by these agents long-used.

TREATMENT.—The first remedial measure in the treatment of cretinism is the removal of the patient from the influence of local causes which have originated the disease. The experiment has been made on a satisfactory scale by Dr. Juggenbuhl, who has established a hospital for cretin children in a high and healthy region on the Abenberg in the Bernese Alps. By devoting his whole attention to the recovery of these most hopeless objects of philanthropic compassion he has succeeded in restoring about one-third of all that came under his care to health and the exercise of reason, and greatly improved all others. Cretinism generally makes its appearance in the second year, and from three to six are necessary to effect a cure; though at an early stage it is effected in one or two. This institution gave to the world the first example of the power of education and health-promoting influences in removing the physical evils which accompany idiocy; and it has been imitated in this country and elsewhere in the numerous asylums for idiots.

The influence of a proper physical training is no where better shown than in the cure of idiocy and cretinism. Dr. Odet, a physician of Switzerland, who was himself a cretin, chose cretinism as the subject of his thesis, when examined at Montpellier, for the degree of M. D. In his dissertation he says, "it was by following these curative means that a learned physician, whom I am proud to own as a near relation, has been enabled to replace me in the rank of a man." "It was also by fortifying the physical system that we were enabled to develop, little by little, the intelligence of my youngest brother, who while still an infant, was separated from his mother by order of his physician. Cretinism seized upon his intellectual faculties under the mask of some of

the maladies incident to childhood. In the second stage the treatment was commenced, but time and patience were necessary. At the age of eight years he began to make himself understood, at nine he articulated some entire phrases, and at eleven he was fitted to enter an academy."

Case by Dr. Juggenbuhl.—M. D. of Fribourg, was five years old on his entrance. His parents were healthy, but they inhabited the lower part of the town, which was subject to cretinism; one of his brothers was also a cretin. M. was slow in learning to hold up his head, to stand and to walk. The glands of the neck were swollen. He had strabismus, a thick tongue and the rudiments of goitre. He soon learned the letters of the alphabet and to pronounce little phrases; but his memory was so feeble that he would often forget on one day that which he had learned the day previous. An exercise much prolonged could alone remedy this evil. But his physical strength progressed gradually with his moral powers. His complexion is now animated and has the tint of health; his step is firm and his body robust; thanks to gymnastic exercises and good air. He can already read a little and distinguish colors. Remedies.—See Scrofula and Goitre, p. 276.

GENUS VI.—CARCINUS.—CANCER.

DISEASES CHARACTERIZED BY VITIATED OR DISEASED CELL DEVELOPMENT.

The difference, says Williams, between a primitive *cell* and a mass of organized structure, is not simply one of magnitude. The primitive cell, though not strictly an organized body is infinitely less complex than the mass, and constitutes the ultimate limit of organized structure. When the formative blastema assumes the attributes of organization, a cell is the first visible form under which it presents itself; it is an atom of organic matter; so that the ultimate cells of organs are the immediate agents of the *organic processes*; the elaboration of nutrient matter, in all its stages and disintegrations for the purpose of secretion and elimination, are essentially *cell-phenomena*.

Organic laws to which the cells, in common with larger masses, are subjected.—1. A definite scale of development is assigned to the primary organic cells proper to the various structures of the body. These cells pass through prescribed gradations of growth, the duration of their life period being equally pre-limited. The typical elements of a primary cell are three only; first an external sac (cell membrane); then a smaller vesicle (nucleus), which contains a smaller (nucleolus). Apply this description to the *ovum*; first is the *vitelline capsule*—the second the *germinal vesicle*, enclosing the third, the *germinal spot*.

Mr. Budge, the German micrographer, reduced a frog to a state of emaciation and then laid bare a small muscle of the leg, and under the aid of a microscope counted with precision the number of its elementary fibres. By proper feeding he now restored the animal to health, and when its size was fully restored, he counted with the same minuteness the elementary fibres of the same muscle. He found that the fibres were considerably increased, as well in number as enlarged in bulk.

Primary cells propagate themselves by the reproduction of others like themselves. When the malignant tendency has been once established in a part by the organisation of a *cancerous primary cell*, in virtue of this power inherent in the cell of multiplying its kind, the continuance of the destructive process in the part is certain and inevitable.

Diseased Manifestation of Cell-Development.—Morbid tissue is generated within the economy in strict conformity with the laws that preside over foetal development. But, as we have already seen, both nervous influence and catalytical agency, give rise to a variety of diseases when they are swayed by disease-causing influences from their natural course. Thus also in some cases the power of histological evolution may create positive disorder in the system. An immense and uninterrupted movement takes place within the organs of which the body is composed, for the purpose of supplying new tissue in the place of those which are no longer fit to accomplish the functions devolving upon them; let this unceasing activity be diverted from its proper channel, and the production of tubercle, cancer, and all kinds of morbid deposits will be the immediate consequence.

We here find, as in other cases, an evident connection between the phenomena of health and disease,—between physiological activity and pathological influence. It is in this light that we are led by the researches of Virchow to look at this subject.

General View of Cell-Formation.—1. Some diseases result in the first place from total absence or considerable deficiency of normal evolution on a given point. The mucous membrane of the intestinal canal affords a fine example of incessant development. New layers of epithelium are continually being secreted to line its inner surface; but the living medium, or blastem, is necessary to their production, and whenever this blastem itself happens to be altered in its essential properties—the modification which always occurs in inflammation, the epithelium disappears, and is no longer regenerated. (See Vol. I, p. 646, and Vol. II., p. 181.)

Cholera also exhibits an example of this; for it has been incontestibly proved that in this disease the vessels that ramify in the internal surface of the intestines are completely laid bare.

1. CANCER.—CARCINOMA.

The name was given by the Greeks, and derived from καρκινος, a crab, from the large blue veins, resembling the crabs-claws, which appear upon its surface. A painful scirrhouus tumor, which terminates in a fatal ulcer. (*Cullen.*)

Conditions Essential to the Production of Cancer.—1. Constitutional causes which lead to the development of the cancerous element in the blood by deranging the functions which preserve this fluid in a healthy state: 2. Local causes which separate the morbid material and transform it into *cancerous deposit*, which may replace the proper textures of the part or become incorporated with them. The cancerous element must first exist in the general circulating fluid before the local injury, or perverted nutrition from some other cause can produce cancer. When these proper conditions exist, any organized structure may be involved by the disease.

Progress and Development of Cancer.—Its earliest condition is that of a *blastema*, or fluid. It is described as a firm, compact, amorphous substance, resembling coagulated fibrine, sometimes containing molecular granules of modified protein or fat. In this blastema, cells are developed which are supposed to be of a specific nature, presenting appearances different from the cells of the ordinary healthy tissues; the cell-wall and its nucleoli, and granules are generally larger, more varied in form, as round, oval, caudate; the cell-wall is also extremely thin and pale; and the action of acetic acid renders it so transparent as to display the nucleus and its nucleoli distinctly. Some of the granules, nucleoli, and nuclei, are without any distinct cell-wall; they all progress to the stage of parent-cells; each possesses amazing reproductive power, and is supposed to produce a second. In some cases a fibrous tissue is developed from the blastema, most probably from the cells; and when formed it resembles the condensed or indurated tissue of other parts; but it is regarded as a new formation, and forms the chief portion of *scirrus*, the most common variety of cancerous growth. (*Southam, Virchow, Vogel.* See *Brit. Med. Jour.* Jan. 1858, p. 5.)

Though the specific character of cancer-cells may be suspected, it has not been demonstrated; and efforts to diagnose the ultimate nature of cancerous growth by the microscope have led some observers into errors. (*Nelaton, Clin. Surg., Phila.* 1855, p. 457. See *Velpeau, Lebert, Robin, Mandl.*) The cells found in cancerous growths may then be regarded as the same as those found in ordinary healthy growths; but, the blastema derived from the blood being in a diseased state, the cells are developed under a specific influence. The cancerous blastema being more highly organized, than of tubercle may be

transformed into the caudate or fibro-plastic cells with their nuclei and granules; and these may reproduce others like themselves, or may go beyond this and form fibrous tissues of imperfect organization; and these have only a brief duration.

In the ordinary effused lymph of inflammation or of healthy granulations, the cell is endowed with the power of progressive development, from the fibro-plastic cell, into filamentous tissue, and then, into the healthy permanent structures. (*Southam, Brit. Med. Jour. Braithw. Retrospe. July, 1858, p. 28.*)

DIAGNOSIS.—When the cancerous action commences in a tumor which has long been inactive, it is attended with frequent shooting pains; the skin that covers it becomes discolored, and, at length ulcerated. Pearson says, "when a malignant scirrhus or watery excrecence has proceeded to a period of ulceration, attended with a constant sense of ardent and, occasionally shooting pains, is irregular in its figure, and presents an unequal surface; if it discharges sordid, sanious, fetid matter; if the edges of the sore be thick, indurated, and often exquisitely painful, sometimes inverted, at others retorted, and exhibit a serrated appearance; and should the ulcer in its progress be frequently attended with haemorrhage, in consequence of the erosion of blood-vessels; there will be little hazard of mistake in calling it a cancerous ulcer." When a cancerous tumor of the breast is ready to break open, it generally becomes prominent in some minute point, attended with an increase of the peculiar kind of burning shooting pain already felt in a slighter degree; a corroding ichor transudes through the skin forming an ulcer. Ulcers of the cancerous nature discharge a thin, acrid sanies which corrodes the parts; the lips are thick, dark colored, retorted; and fungous excrescences often grow from them, attended with excruciating, pungent, lancinating, burning pains, and sometimes with bleeding. Though every hard tumor of the female breast is not a cancer, all such as occur after the cessation of the menses may be regarded with suspicion.

PATHOLOGY.—Thus far the microscope has only shown that the primary elements of morbid growths do not materially differ from those of the normal tissues; and that these constituents vary in the degree of their development, their mode of arrangement and in their relative proportion to each other. In innocent tumors the difference is slight; but in malignant growths there is a general want of order in the distribution of all the elements and structures that enter into their composition. The following division of the varieties of cancerous growths is based on the microscopic disclosures of their minute structure:

1. Gelatiniform or colloid cancer; marked by an excess of blastema.
2. Cephaloma, medullary, or soft cancer; characterized by an excess of cells.

3. *Scirrhus*, *petrous*, or *hard cancer*, in which the fibrous tissue predominates. It forms a hard, unequal, indolent tumor, small in the beginning and increasing gradually.

These different forms may occur separately or in different parts of the same tumor.

The other varieties of carcinomatous disease are modifications of the above. Among them are :

4. *Hæmatoid cancer*, or *fungus hæmatodes*, in which there is an excess of blood, free or enclosed in vessels.

5. *Melanosis*, in which there is a superabundance of coloring pigment within the cells;

6. *Ostoid cancer*, or *spina ventosa*, in which the osseous tissue predominates;

7. *Cancroid*, or *epithelial cancer*, containing an excess of epithelial cells;

8. *Lardaceous*, or *reticular cancer*, in which fat-globules are infiltrated through the morbid deposit. (*Southam*, from *Wedd's Pathol.*, page 535.)

The microscope also shows that the cancerous deposit exists in the surrounding structures where it would not be suspected. The cells and granules extend along the areolar tissue, entering into the tissue itself, and even into the nerves and coats of the blood-vessels; the natural structures being absorbed the cancerous deposit supplies their place. (*Page, Pathol.*)

The transformation of a tumor innocent in character into one more malignant can scarcely ever take place, though a few instances are given, by Sir Astley Cooper, and Mr. Brodie, in which fatty tumors have taken on malignant action. (*Lectures, Path. and Surg.*, 1846.) Simple cysts sometimes become the seat of cancer, both in the ovaries and mamma as well as other parts. (*Southam, Manchester Dispens. Brit. Med. Jour.*. Jan., 1858.)

The best microscopists and pathologists of the present day deny the possibility of distinguishing the cancer-cell. Virchow assures us that he has never seen a cell-formation in cancerous structures of peculiar attributes. Bilbroth, who has paid great attention to the minute structure of cancerous growths admits that it is impossible to classify tumors from their microscopic appearance. He alludes to instances in which the same structure may be healthful in one case and malignant in another. Virchow demonstrates that simple connective tissue with its natural cellular bodies may become the focus of a structural metamorphosis; and sees no reason why one shall not change into the other. He thinks then that cancer is by no means a characteristic strictly defined, and under all circumstances the same process. In one part of the body it may at one time be a healthy structure and be

cancerous at another time. The hyperplasy of cells does not apply to all forms of cancer. In scirrhus, the proliferation of cells is very scanty.

TREATMENT.—1. External Applications.—The success claimed by the advocates for the local treatment of cancer has nearly always resulted from an error in diagnosis. Pretenders always claim to have some infallible specific, the composition of which they dare not reveal to the public; but they generally succeed in curing a large number of trifling sores and tumors which they declare to be cancers. Ignorant people do not question the accuracy of the impostor's diagnosis and wonder at his success. When cancer really exists it can scarcely, at any stage, be treated by local applications without hastening the progress of the suspected tumor into an active cancer. The removal of the suspected part by the knife promises nothing better. "In a large proportion," says Sir Benjamin Brodie, "of cases, in which the operation is performed, the patient is not alive two years afterwards; and in a great many cases, instead of the operation stopping the disease, it actually seems to hasten its progress; moreover, the operation itself is not free from danger." The testimony of all prominent surgeons of our time will be found to confirm the correctness of this opinion.

It is a principle in surgical practice, says Mr. Syme, "that malignant tumors, or sores should be left free from disturbance, or completely removed, since tampering with them by irritating applications is the most certain means of exciting disease in the lymphatic glands or other textures." When the nature of the disease is settled, and its rapid progress inevitable it should be promptly removed when its locality and extent are such that *entire* removal is possible. Even when the nature of the tumor is doubtful, it is far better to remove it when small, than to incur the risk of this most terrible of diseases; though the disease may sometimes appear again, from constitutional tendency, or from the whole not being removed. "But when the tumor has been originated by some accident, not spontaneously; when it is *not really cancerous* in its nature; when the patient is otherwise healthy, when no appearance of malignancy is seen in the cancer; when the adjacent glands and absorbents are still unaffected; and the parts involved do not require that very important nerves or arteries be cut, the operation may be expected to terminate successfully; but in such cases it is hardly possible to imagine one that would justify the use of the knife."

The Treatment of Cancer by Caustics has been more generally followed than any other; and up to the present time the profession cling to it as a lingering relic of the ancient faith. The best recent authorities for a modified escharotic, or "enucleating" treatment of

cancer are Drs. Mac Limont and Marston. (See the *British Journal of Homœopathy*. May 1864, p. 481.)

After a preliminary treatment, with which we find no fault, the following "*Mode of Procedure for the Removal of the Cancerous Tumor of the Breast*" is given. "When the skin was entire, the size and bearings of the tumor were carefully ascertained and mapped out on the breast with Nitrate of Silver or Vermillion-pigment. A mixture of ice and salt was in one of the cases applied to the tumor, so as to deaden the local sensibility; this effected, and the parts carefully dried; the skin over the tumor was destroyed by means of undiluted Nitric-acid, the action of which was kept up till the skin assumed a tawny and yellow aspect; (about thirty seconds being generally sufficient to produce this condition.) The part was now well doused with cold water, and a piece of lint applied to the surface, spread with equal parts of a paste (composed of a strong decoction of Hydrastis root, powdered Hydrastis, Chloride of Zinc and Flour,) and Stramonium ointment. On removing this dressing at the end of twenty-four hours, a yellow, hard, and dry eschar will be found to have formed. The amount of pain following the application of the acid varied with the extent of surface to be destroyed; but the congelation of the parts very materially lessened this suffering, which might otherwise be rather severe. But we always found that much after-suffering was saved by endurance of a little temporary smarting caused by the acid; for when applied too timidly, the skin was only partially destroyed, and the action of the paste thereon gave rise to some suffering.

"On removing the dressing, a slight amount of erythema is sometimes visible around the eschar, which presents a yellow, horny, and dry appearance.

"Throughout the entire extent of this eschar vertical incisions are made with a sharp scalpel to the depth of about one-twentieth of an inch, care being taken not to draw blood. These incisions should be parallel to one another, at a distance of about half an inch apart, and into each is inserted a thin slip of calico smeared with the paste; over the whole a *light* compress should be applied, kept in its place by a strip of adhesive plaster. The incisions are deepened and the dressings renewed usually every day, and this is continued until the paste has percolated the entire mass of the tumor."

The depth to which the incisions are carried "must be left to the judgment of the operator. If the knife be used too freely, the bleeding will embarrass and annoy both the surgeon and the patient," as well as materially increase the pain, produced in the living tissues by the paste. On the other hand, if the scalpel be too timidly used, the action may be too circumscribed or arrested too soon."

The time required for the separation of the slough varies with the

size of the tumor. In general at about the end of a fortnight from the first operation a line of demarcation forms around the entire tumor, invariably commencing at its upper or least dependent portion; this deepens from day to day; the living and healthy tissues beneath granulate and rise, pushing the tumor out; so that at a period verging from four to seven weeks, the entire mass is thrown off, leaving a much smaller chasm than might be expected judging from the size of the slough itself." The wound gradually takes on a clean and healthy aspect, free from even the secretion of pus which follows the removal of cancer by the knife. And not only is the evil effect of the absorption of pus avoided by this method of operating, but all *putridity* and effluvium are effectually counteracted by the *antiseptic* nature of the paste. The constitutional irritation which follows the operation, is but slight; the dressing of the wound after the removal of the slough consists only in the daily application of cotton-wool spread with Stramonium ointment. It is claimed that the process of removing cancers by enucleation is applicable in many cases in which even the old surgeons would have feared to employ the knife; that it permits the removal of only such portions of the diseased part as may appear necessary at the time of operating. It is only regarded as likely to be unsuccessful or injurious in cases in which cancerous disease has already extended into the arm-pit, or to internal organs,—as the brain, uterus, mesenteric glands, stomach, or lungs; also in the cases in which local disease has extended to parts involving anatomical difficulties which would render surgical interference unjustifiable.

CANCER OF THE FACE, LIPS, CHEEKS, NOSE AND TONGUE.—
Medical Treatment.—Cancer is said to be more common on the lower lip, but it is often met with on other parts of the face. It develops itself out of a scurfy or ulcerated spot which gradually gives rise to scurfy excrescences, &c.; or a portion of the lip becomes hard and swollen; it then becomes intensely painful and breaks. The cancer gradually involves the skin of the chin, the mucous membrane of the mouth, the gums, submaxillary glands, destroying the whole lip and the bones. Some ulcers of the lip become malignant without being cancerous, especially syphilitic ulcers.

Cancer of the tongue generally commences with a hard circumscribed swelling on one or the other side of the tongue; it is marked by lancinating pains, the swelling breaks, and extends rapidly. Ulcers in the spongy tissue of the tongue frequently become obstinate, or are rendered so from constant moistening by the saliva, or by the irritation of points of decayed teeth. The papillæ frequently become hypertrophied, forming spongy excrescences.—Syphilitic ulcers of the tongue often degenerate into cancerous ulcers.

Cancers of these parts, as well as every other part, depend upon a

peculiar specific disposition of the organism which may be hereditary. The disease may be developed by a blow or contusion; by treating an ulcer, an induration or excrescence of the face, lips, or nose, by external irritating applications. It may be developed by the progress of scrofula, syphilis; or the suppression of habitual secretions, &c (Hartmann. Vol. 4, p. 31.)

PROGNOSIS.—When small, cancer of these parts may be cured; the prognosis is unfavorable when the cancer is large, the constitution enfeebled, and the disease has returned again after an operation. Excision is generally useless, causes unnecessary suffering, and usually hastens the fatal termination.

Arsenicum.—This is the most important remedy. We prefer the high potencies as we know the disease incurable by any crude medicines, however appropriate to the symptoms. We begin with the thirtieth dilution at least, repeating at short intervals, (every six hours) till some perceptible effect be produced. (Hartmann.)

SYMPTOMS.—Burning swelling in the nose with pain on contact; tumor in the nose; ulceration of the nostrils, high up, with discharge of fetid ichor; — ulcers in the whole face; wart-shaped ulcer on the cheek; dry cracked lips, brown streak in the lips, as if burnt; bleeding of the lower lip; ulcerated eruption around the lips; cancer-like eruption on the lower lip, with thick crust, hard, pad-shaped edges with burning pain, particularly when the parts become cold, and with a lardaceous bottom; spreading ulcer on the lip, painful in the evening, when in the bed, with tearing and smarting in the day-time during motion, which is worst when touching the ulcer and in the open air, disturbing the night's rest; corrosion of the edge of the tongue, in front, with smarting; the tongue is blackish, cracked. Arsenicum often needs some other remedy with it; but it is undoubtedly the principal remedy when the cancerous dyscrasia has tainted the system. It is specific for cancer of the nose, tongue, and alveolæ. (Hartmann.)

Arsenic., says Hahnemann, is such a powerful agent that we can not decide whether it is more hurtful in the hands of the rash than salutary in those of the prudent. It has effected remarkable cures of cancer of the face, as described by Fallopius, Bernhardt, Rönnow and others. Its true power in this direction depends on its homeopathic power of producing in healthy persons *very painful tubercles, which are cured with difficulty*, as witnessed by Amatus Lusitanus; very deep and malignant ulcerations, according to the testimony of Heinreich and Knape, and cancerous ulcers by Heinze. The ancients were unanimous in their praise of arsenical plasters against pestilential buboes and carbuncles; while Degnier and Pfann saw it give rise "to inflammatory tumors which quickly turn to gangrene," and Verzascha and Pfann saw it produce "carbuncles and malignant pustules."

BUCAL CANCER.—CANCER OF TOBACCO-SMOKERS.—Dr. Buisson, of Montpelier, has published sixty-eight cases occurring in smokers. The disease is becoming more frequent, having hardly been noticed in the last century. The lower lip is most frequently affected; the Spanish habit of expelling smoke through the nostrils produces epithelial vegetations in the nostrils. Dentists now find it difficult to fix the plates for teeth in the mouths of chewers and smokers on account of the softening and degenerescence of the mucous membrane and sub-mucous tissue. A. Vogel and Reischaur, (chemists,) found tobacco-smoke invariably to contain sulphuretted hydrogen and prussic-acid.

In syphilis it is often seen that smoking localizes the syphilitic virus, producing the *mucous tubercle* in the part of the mouth familiarly occupied by the pipe or segar.

LUPUS.—At a meeting of the Central Society of Homœopathic Physicians, of Germany, (1861) Dr. Mayer related a cure of a lupus on the lower eye-lid by Apis 6. A few months afterwards lupus showed itself again on the ala nasi, but Apis was now of no avail. Kirsch remarked, that Apis is not indicated in lupus; but Apis stands in a closer relation to the eye-lid, than to the nose.

CANCER OF THE TONGUE.—*Sempervivum-tectorum.*—*Live-for-ever.*—1. Dr. Maly, of Glatz, says: a sickly woman, at the change of life, had a swelling at the margin of the tongue, as large as a bean; burning pain on shutting the mouth; occasionally bleeding; intolerable at night; disturbing sleep; made worse by acids; swelling like a cyst with two small knots, one bleeding; over the swelling three varicose veins. Tried Aurum, Arsenicum, Carbo-veg., in fourth, tenth and sixth potency; but it grew harder, larger, and impeded speech.

Sempervivum-tectorum juice was applied externally three times a day. It made the tumor smaller, but it afterwards inflamed and became very sensitive. Then tried two drops of the second dilution internally. This daily reduced the tumor to one-third in ten days, menstruation reappeared, which continued five days; tumor gradually reduced in size to a small pea; then less sensitive, and the patient did not return to the hospital.

2. General B. — had an ulcer on the tongue, left margin; tried Alumina, and Mer.-corrosivus; ulcer three-fourths to one-half inch deep with sharp edges, hard foundation of bluish color with four knots size of lentils; two large veins, sensitive while eating.

Sempervivum-tect., first centesimal dilution in water, twice a day, externally applied. Second day less painful, could eat; edges smoother. In three or four days the veins smaller; small reddish tumors paler. Fifth and sixth day they disappeared, leaving the base of the ulcer covered with whitish membrane. Seventh to ninth day, medicine omitted, sensibility greater. Tenth day repeated; ulcer smaller; veins very small. Case lost sight of.

3. A married woman, aged twenty-seven, had for ten days pain under the tongue, impeding eating and talking. On lower surface, near the root, is a bluish-red swelling, size of a half bean, smooth, but hard; on the other side a large vein; at one point a membranous exudation.

Sempervivum-tet. sixth. Two doses, one every other day, for four days; no pain; after eight days much smaller; menstruation restored though pregnant six months; in three weeks nothing remains but a somewhat enlarged vein.—(*Homœopath. News.*)

Hydrastis Canadensis.—Dr. Bayes, of Cambridge, states, that he "has found the Hydrastis exercise a marked influence in relieving the pain of cancer, while at the same time, it has improved the general health of the patient." But he has also seen, "that very sudden prostration of strength has accompanied the continued use of the remedy beyond a certain point." Dr. Bradshaw, (*Brit. Journal of Homœopathy*. Oct., 1861,) gives five cases in which Hydrastis was used with the following results: In case No. 1. the patient suffered from "unmistakable carcinoma" of the left breast. He "gave her one pilule of Hydrastis four-times a day," with benefit to her general health; and he speaks of the remedy as "evidently exerting an absorbing, counteracting influence over the scirrhouus tumor."

In another case of scirrhouus tumor in the left breast the disease "remained stationary."

"In a third case of cancerous ulceration of the cervix and os-uteri, there was some mitigation for a few weeks, but, ultimately the patient died." A fourth case received no benefit. In a sixth case of cancerous disease of the os and cervix-uteri, Hydrastis was given for six months. The patient "lingers on, suffering less, and the disease seems arrested."

In the second case (by Mr. Bradshaw) he says: "the medicine made the patient feel so wretchedly ill that she feared it would kill her: the heart was beating irregularly and tumultuously, and she looked nervous and ill." Dr. Bayes now says, this corresponds with his observation of "the rapid prostration which often follows the administration of too large a dose of Hydrastis." This train of symptoms he has "met with in several cases where the mother-tincture was given." He therefore thinks, that the medicine should not be administrated in too frequent doses, or in too low dilutions. The plan he has found most beneficial was "to begin with the thirtieth dilution, giving three globules every night, for a fortnight; then a pilule of the twelfth dilution twice a day, for another fortnight, followed by the sixth, the third, and finally half-drop doses of the mother-tincture, in the same way, giving a fortnight to each dilution, &c. He approves Dr. Pattison's suggestion to avoid rubbing the tumor, but to apply "a lotion over the parts by means of moistened linen rags."

A cold infusion of the remedy is thus prepared: "3ii. of the powdered Hydrastis to a half pint of water. Allow it to stand four days, then strain and keep in a cold place." This is said to be of great service as an application to ulcerated surfaces.

The later experience of Dr. Bayes with this remedy is highly important: A case of cancer on the left breast in a young unmarried woman, referred to in his first paper, came under his care, March 19, 1860. "The tumor was as large as a small hen's egg; the nipple retracted and the skin puckered. She had been for two years under allopathic care, and was strongly advised to submit to an operation. The tumor soon ceased to be painful, and had totally disappeared on Feb. 20, 1861.

Cases at the Cambridge Homœopathic Dispensary. Case first. A lady, aged forty-one, married—inflamed indurated breast—found on the seventeenth Feb. to be scirrhus.

Hydrastis 3. iv. gtt. in a half pint of water. A table-spoonful twice a day. Up to March twentieth no change. Hydrastis-tinct. gtt. xii. Aqua-dist. 3ii. a tea-spoonful every night.

This treatment was continued without much variation, till June eleventh. "The tumor has rapidly disappeared, there is still some slight pain. A pilule of Arnica every morning, Conium 30 every third night.

July fourth, the breast remains quite well; some slight indigestion. Nux 6, &c.

Case 2.—A married woman, has ovarian tumor of the right side, with severe pain, especially in walking. Has had a cancer excised in the right breast. May fourth, prescribed Hydrastis-can. 30. every third night.

Aconite twice a day.

May eleventh.—Pain lessened though still severe at night. Rhus.

Twenty-sixth.—Pain almost gone; tumor still remains, and is weighty.

Hydrastis 3. given three times a day.

June fourth.—Still better.—Continue.

Thirteenth.—Much the same. Iodine 3. gtt. in a pint of water, a table-spoonful twice a day.

June twenty-sixth.—Better. Mercur.-sol. 6. every night.

July fourth.—Still better. Repeat—and give Merc.-iod. 1., gr. ii. every third night.

July ninth.—Discharged cured.

Case 3.—Mrs. L.—July 2, 1860.—Cancer of the right breast, hard, nodulated, very painful at times; skin had a bluish appearance over the tumor, is puckered, and adherent over a portion of the surface the size of a shilling; tumor not adherent to the ribs.

December twenty-fourth.—She has been under the influence of

Hydrastis, and is better; the tumor under its use has decreased in size, and was scarcely ever painful, has still a bluish appearance, and is yet adherent to the skin. Occasional intercurrent remedies have been given to meet occasional symptoms.

Case 4.—A widow, aged seventy-seven, has cancer of the right breast. The tumor is unattached to the skin or ribs. There is a small hard moveable tumor, also, just above the clavicle. She has occasionally severe pains. Hydrastis was used externally and internally from August 24, 1860, to October, 1861. The tumors have not increased, are less painful, and the patient is in excellent health. The Hydrastis has been used in the thirtieth dilution, also as low as the mother-tincture. A lotion of Hydrast. mother-tincture gtt. x. Aq. dist. $\frac{1}{xvi}$, has been applied twice a day.

Case 5.—Mrs. B., aged twenty-five. Admitted Sept. 12, 1860. The cervical glands of the left side of the neck are enlarged, apparently three, and have a stony, hard feeling. A tumor of similar character was excised at the Allopathic Hospital, some years since, and a deep scar remains. Some months after the operation, these glands enlarged, and are now very painful. Calcarea-carb. 30, gl. iii. every third night, &c.

Oct. third.—Better. Calc.-carb. 12, a pilule every second night.

Twenty-fourth.—The hardness remains; there is occasional shooting pain. Hydrastis, 3., a pilule every night.

Nov. fifth.—Much better; the swelling decidedly less. Continue.

Twenty-third.—Better. Suffers from indigestion. Repeat Hydrastis, and Nux.vom., a pilule twice a day.

Dec. seventh.—Greatly better. Repeat pil. Hydrast.

Twenty-sixth.—Remains better; no pain. Repeat the pilule.

Feb. thirteenth.—Still better, and feels so well she is allowed to return to her home, (sixteen miles away,) to remain if there be no return of the pain or increase of tumor. Hydrast. mother-tincture $\frac{1}{iii}$. Two drops in a little water twice a day when in pain.

Case 6.—Mrs. D., aged fifty-five. Admitted Dec. 10, 1860. Tumor on the dorsum of the foot; occasionally painful; has had it two years; it is stony-hard, the size of a walnut, and nodulated. Excision had been advised at the Hospital. Hydras.-can. 3. a pilule twice a day. Tinet. Hydras. $\frac{1}{ii}$. Aqua-dist. $\frac{1}{iijs}$. to be rubbed in every night.

May sixth.—The tumor was almost removed, not being larger than a pea.

Case 7.—Mrs. A., aged forty-five. Admitted Dec. 10, 1860. Scirrhous of the breast. Hydrastis lotion, and Arsenicum 6; a pilule twice a day. This patient was suffering also from phthisis, for which she took Bryonia, Phosphorus and other medicines. The Hydrastis lotion al-

ways removes the pain in the scirrhoue breast. Continues under treatment.

Case 8.—Mr. G., aged fifty. Admitted April 28, 1864. Confined to bed with a large open cancer of the left breast. Under the use of Hydrastis she continued to improve till, on March 5, 1860, she was so far removed as to be able to go out daily and to do her house-work. “The cancerous ulceration has considerably diminished; it secretes a far healthier pus, and her general health has greatly improved. In her case the Hydrastis has been discontinued at times, from its producing the depressing effect on the heart’s action alluded to before.

Case 9.—Admitted July 21, 1860. Mr. Freeman, the surgeon’s notes say: “Mrs. J., aged thirty-seven. Health good. Has stony-hard tumor in left breast, unattached to skin, perfectly moveable, the size of a large filbert, surface somewhat nodulated; suffers from lancinating pains. Had first Hydrastis 12, a pilule twice a day; afterwards, Hydrast. mother-tincture, a third of a drop, three times a day; she had intercurrently, a few doses of Nux-v. for dyspeptic symptoms. The tumor became painless and gradually lessened till a portion, like a vein filled with coagulum, the size of a crow-quill, and a third of an inch long, remained. I wished her to continue the treatment, but she thought herself well and remained away. I saw her in May, 1861, and she then was quite well, neither pain nor induration remaining.”

Aconite.—In several forms of cancer we have observed essential benefit from the use of Aconite. Whether its ameliorating action has been due to its influence upon the circulation, the nervous system, or the pores of the skin, we know not; but that it possesses some peculiar power in modifying the constitutional ravages of cancerous degenerations, we have had ample proof.

We are in the habit of prescribing the first decimal dilution in water.

CANCER OF THE STOMACH.

GENERAL REMARKS.—Cancer of the stomach may begin in an elderly person, hitherto free from dyspepsia, by at first capricious, and afterwards diminished appetite; by occasional nausea or vomiting, a sense of uneasiness and distention of the stomach. The complexion is first pale and unhealthy; it afterwards acquires a muddy yellowish, or faint greenish hue. The gastric symptoms increase, and vomiting becomes more frequent and urgent; the local uneasiness deepens into pain; and both pain and vomiting are aggravated by food. At a later period haemorrhage generally occurs. It is usually small in amount, and about the same time a tumor becomes perceptible in the middle of the epigastric region; as the disease progresses, all of these symptoms

increase ; debility and emaciation follow, and these soon lead to extreme prostration, anasarca, delirium and death.

In many cases these symptoms are complicated by ascites, jaundice, perforation of the coats of the stomach, fistula, or phlebitis. In others there arise symptoms showing cancerous deposit in other organs, especially the lungs and liver. The disease usually advances towards its termination with a speed and severity constantly accelerating ; and, perhaps, most generally ends in death in about one year from its first invasion. (*Brinton. Brit. and For. Med. Chiv. Rev.*, Oct. 1857.)

DIAGNOSIS.—In cancer of the stomach the appetite usually fails entirely. In ulcer of the stomach it becomes capricious ; sometimes inordinate ; but the patient learns to avoid eating as far as possible, in order to avoid the pain which follows it ; though he still has some degree of appetite. Whereas, in cancer the anorexia or absence of appetite seems to be a specific result of the disease. As such it seems to be affected through the same nervous channels which ordinarily transmit the sensations of hunger and satiety. The anorexia, therefore, is seen to commence at a very early stage of the deposits of cancerous matter in the coats of the stomach ; and preceding all other local symptoms. It is most clearly marked in the younger subjects, and in the softer varieties of cancerous deposit, and is equally marked in the cases of males or females.

The pain in cancer *remit*s in violence frequently, but scarcely ever intermits. Its site does not indicate the seat of the cancer ; though cancer of the lesser curvature seems to be connected with pain in the inter-scapular region, which is often peculiarly severe in some cases ; and a marked inflammation of the posterior portion of the stomach seems to cause pain ranging from the middle of the dorsal to the lower part of the lumbar region. The pain in cancer of the stomach is first lancinating ; beginning at an early stage and rapidly assuming a marked severity. In the course of a few days it becomes so severe as to leave most other symptoms out of view. The pain of gastric ulcer may intermit, and is increased by food ; but that of gastric cancer neither subsides after digestion is accomplished, nor after the stomach is emptied by vomiting. In later stages of the disease the pain sometimes subsides or changes in character. Some patients describe it as a dull, slow, gnawing, or burning, with a sense of weight, oppression, tightness, and distention and soreness on pressure in the epigastrium. The dull burning belongs rather to the stage in which the process of ulceration is going on in the cancer, rather than in the stage of its deposition. It may then be increased by food, is referred to a small spot, and may be partially relieved by vomiting.

The vomiting more frequently attends cancer of the pylorus than that of any other part ; it often begins when the cancerous deposit is

very small, and seems to be connected chiefly with local irritation of the nerves distributed to the seat of the disease. At a later stage, when the softening and ulceration of the cancerous deposit has removed the mucous membrane, we have vomiting of a different order. The subjacent tissue being exposed, becomes highly irritable; and vomiting is excited by almost every thing taken into the stomach. It then generally occurs at short intervals throughout the disease, though not in every case. The matter thrown up is large in quantity, has a yeasty appearance, and contains sarcina torula and fragments of destroyed membrane and cancer-cells. There is often at this period of gastric cancer a torpor, or suspension of the peristaltic action of the stomach, either from paralysis of the nerves, destruction of a portion of the muscular fibres by the process of ulceration, or weakening by their undue extension.

The haemorrhage occurs in, perhaps, half the cases, though some writers have observed it still more frequently. Of those in which it does occur, at least seven-eighths, show the blood so mixed with the gastric juice, food, bile, or softened cancerous substance, as to present the appearance rather of coffee-grounds than of blood. The degree of congestion which causes the haemorrhage is small in the earlier stage of the cancerous deposit; but it afterwards becomes more considerable; and the flow of blood may then be so great as to cause death. When this occurs, dissection shows: 1. that the blood had proceeded from the sub-mucous plexuses, or from the minute capillaries of the inter-gastric surface, and not from any large arterial trunks; 2. From vessels destroyed by ulceration; or, 3. From the erosion of large vessels external to the stomach.

The coffee-grounds appearance may be observed in cases of ulcer of the stomach, though there is generally less of it than in cancer. The characteristic *cancer-cell growth* can be detected in the matters expelled from the stomach, when the disease has reached the stage in which these cells are thrown off by exfoliation or sloughing. The microscopical examination can be made by diluting the fresh liquids expelled by vomiting, and placing a portion under the field of a microscope of sufficient power.

The diagnosis may be further assisted by manual examination of the external surface of the abdomen. The tumor may at least be detected, though its nature must be made out by comparison of the various concurring symptoms.

The color of the skin in gastric cancer is "a muddy greenish pallor." The original or pathognomonic cachexia is "regarded as the result of the humeral disease which precedes, and brings about the cancerous deposit." (*Brinton.*)

The cachectic aspect of gastric cancer often imitates that of ulcer

of the stomach, and the resemblance is sometimes so close as to defy distinction; both diseases involve a similar general condition, the joint product of ulceration, haemorrhage, vomiting, pain, starvation. Wherever cachexia precedes these circumstances, or is present in a degree utterly disproportionate to what their aggregate influence might lead us to expect, it becomes a leading, almost pathognomonic symptom.

A case was published by Dr. Porter, of New-London, Conn., of a man aged sixty-six, who had good health up to two months before his death, though he had some regurgitation of food and slight fullness after eating, but no pain. The coffee-grounds vomiting commenced Dec. 19, 1847; but he continued to attend to business till January 3, nineteen days before his death. Jan. 14, he threw off a large quantity of uncoagulated blood mixed with coffee-grounds, and this was often repeated afterwards. He had, however, scarcely any pain. Near the close of life there was an indefinable distress, a sense of sinking and emptiness, like faintness from want of food. Still there was none of the lancinating pain common in cancer,* only some enlargement like a small tumor near the pylorus or duodenum. There was none of the "dingy, sallow, exsanguinous, yet opaque appearance so common in cancerous diseases." On dissection a scirrrous tumor, the size of half a small orange, occupied the pylorus and adjoining portions of the stomach, somewhat hypertrophied, mainly hard, but some ulceration had commenced. (*Amer. Jour.*, 1848, p. 378.)

PROGNOSIS.—Cancer of the stomach may be regarded as one of the most hopeless forms of this most terrible of human diseases. It is dreaded, not so much because of its being almost uniformly fatal, but for the insufferable pain which attends on it throughout so much of its course. The duration, says Dr. Brinton, of cancer "may be estimated at about thirty-six months from the first appearance of the symptoms; but few cases survive the twenty-fourth, and some have sunk under extreme suffering at the end of a single month."

TREATMENT.—This can only be palliative. The mildest measures can alone be used without injury, though *Arsenicum* may be tried in homœopathic doses far enough to test its powers, which are sometimes surprisingly great.

Lime-water may often be employed in quieting the stomach; but its remedial powers seem confined to the stage of ulceration from chronic gastritis.

Although in fully developed cancer of the stomach, no just hopes can be entertained of effecting a cure, we may do much to palliate suffering, and even to prolong life, with judiciously-selected homœopathic medicines. Among these may be cited, *Arsenicum*, *Cicuta*, *Conium*,

Veratrum-alb., Veratrum-viride, Kreosote, Mercurius-corr., Thuja, Carbo-animalis, Ipecac, Tabac., Cannabis-ind.

Clematis.—Induration of the lymphatic glands of the breast, when painful to the touch; appearance of cancerous degeneration; ulceration with pulsating, burning and lancinating pains along the borders of the ulcer, particularly upon being handled.

CANCER OF THE UTERUS.

SYMPOMS.—*Incipient Stage.*—Sharp and lancinating fugitive pains in the back and loins, across the supra-pubic region, or shooting along the front of the thigh, or along the course of the sciatic nerve, inducing numbness or debility of the whole limb. A tumor or decided fullness in one or the other iliac fossæ, fixed pain or tenderness appearing to issue out of the abdominal ring, irritation of the bladder with dysuria; sensation at the termination of the rectum like that of haemorrhoids. Menstruation may be regular, but there are often bursts of haemorrhage at the period or in the interval. After the disease has continued long the appetite is impaired, sleep disturbed, the flesh wastes and becomes softer, countenance pale and expressive of distress.

The os uteri is hard at the margin, or fissured, projecting more than natural, and irregular in form. In the situation of the muciperous glands, several hard well defined projections like grains of shot under the mucous membrane; pressure on them gives pain or makes sickness at the stomach. The cervix is slightly enlarged and tender; circumference of the os uteri, especially between the projecting glandulæ, feels turgid and presents a deep crimson color. No thickening or other alteration of the parts adjoining. At the connection with the cervix the movement is free; no consolidation of the uterus with the neighboring contents of the pelvis. The morbid change seems entirely confined to the os uteri, with an anomalous tingling in front and inside of the thighs. These last for a few hours, or a day or two and then disappear, perhaps for weeks, but again and again return in the same situation, for a long time not increasing in severity. Internally the feeling of tenderness increases. There is now slight irritability of the bladder; but appetite, digestion and sleep may continue good; the pulse not changed, as in many other uterine affections of serious character. The patient does not yet anticipate danger.

When the disease assumes a more dangerous form the first change takes place in and around the muciperous glandules which exist in such numbers in the cervix and margin of the os uteri. They become indurated by the deposition of scirrrous matter around them, and by thickening of their coats, in consequence of which they feel at first almost like grains of shot or gravel under the mucous membrane.

The further symptoms correspond more nearly with those of cancer in other organs. See p. 282. Remedies, p. 285 to 297.

FUNGUS HÆMATODES.

Case of Field-marshall Count Radetsky.—In July and August 1839, this distinguished Austrian general was attacked with congestion of the head and vertigo; and soon after it passed off there commenced a pressure in the right eye, inflammation of the eyelids, lachrymation, occasional protrusion of the eye, and pressure in the forehead. He was relieved by remedies, but the under eyelid remained inflamed. In May, 1840, there was another attack of vertigo; after it he was well except one eye. October 9th. The Marshal, on the occasion of a great review was exposed during five hours to extremes of temperature and fatigue. Towards evening his face became red, he had fever with great pain in the right side of the head; the right eye was inflamed and protruding from the orbit; pulse full and hard. He was relieved by homœopathic remedies; but lachrymation of the right eye continued and there was a small swelling in the external angle. About the end of October further exposures were followed by the appearance of a small tumor commencing at the inner angle of the eye near the lower lid; the external tumor enlarged; the eye protruded, and there was pain in the head. Dr. Hartung, medical counsellor to his Excellency, prescribed the ordinary homœopathic remedies, beginning with Aconite and all the symptoms of immediate urgency were, for the time, removed. But the growth of the fungous tumors could not be stayed. That above the external angle assumed a purple color, that between the eye-ball and the lower lid became fungus-like, elastic, granulous, purple, and painless. The eye became protruded and turned from its normal axis of vision, so that the pupil stood looking outwards and upwards, the ball restricted in its motions, but the power of vision uninjured.

At the beginning of the next year, the case beginning to be regarded as incurable, Dr. Hartung made an official report to Vienna, and further medical counsel was ordered by the Emperor. The tumors had increased to one-third of an inch each in diameter, and the fungous growth was evident around the whole circumference of the eye-ball, which began to protrude more sensibly. Vision began to suffer; towards the external angle objects were only partially visible; the conjunctiva was softened, and dark-red, approaching to blue; lids glued together in the morning; sensibility to light increasing in the day-time; lachrymation, heat, dryness and pain at night becoming worse. A consultation was held on the 26th of January, at which the consulting allopathic physicians, Drs. Jager and Flurer, declared the case as hopeless, "after forty years of experience." Dr. Hartung despondingly resumed

the sole direction of the case. The distinguished patient was now eighty years of age. On the 19th of February, 1841, the appearances threatening scirrhus had changed; haemorrhage had begun, the tumors had diminished in size and were less painful. The report of this date, shows improvement in vision and general health; and diminution of pain. March 16th. The fungus which at its greatest size had been three inches in circumference had been reduced to a small tumor which was visible only on drawing down the under lid; the eye moved freely in the orbit, and the power of vision was restored. April 22d. The tumor had so far diminished that only a slight projection on the lid remained. The Marshal was employed in his usual duties, exposing himself to "a low temperature, and again in the increased heat of the sun. He continued in his former mode of life, without any injury to the eye. The disease was regarded as cured, and no further reports were required."

The remedies used during the treatment of the Austrian Field-marshall's case are recapitulated by Dr. Hartung in his communication of June 12th, 1841. They were: Arsenicum 10°; Psorin 10°; Herpetin 10°; Carbo-animalis 10°; and Thuja-occident. He observed "that the first three remedies aggravated the disease." He then prepared Thuja 10°, one drop in three ounces of distilled water, a tablespoonful three times a day. "The first day appeared all the symptoms that his Excellency had occasionally suffered for years; as: headache in the right side of the forehead, cough, particularly at night, slight diarrhoea, pain in the kidneys, with a sandy sediment in the urine, itching, and a reddish rash-like eruption on the inner side of the thigh; the night was quiet, with the exception of the cough. The second day the feelings were the same, but when pointed to they were gone away like a breath. Third day no more pain; itching in the inner angle, secretion of a milky and rather cream-like moisture on the whole extent of the fungus. After this the eye was moistened with the solution of Thuja every two hours. On the fourth day there was no pain; the secretion increased; the fungus appeared to be diminishing; fifth, sixth, and seventh days, no pain. The secretion increased, the lower part of the fungus diminished, to the astonishment of all who had previously seen it. On the eighth day after the first use of the Thuja I gave Carbo-animalis 10°, 3. Effect first and second days as after the Thuja; the pain in the forehead appeared, only it extended itself to the left side, and to the ear, like a breath passing over. The secretion continued; no pain in the eye. The third, fourth, fifth, sixth, and seventh days, no headache; the secretion continued. I now every morning touched the protruding fungus with a fine pencil, moistened with the fourth dilution of Carbo-anim. The Thuja was continued on the circumference. The fungus diminished, and the eye retreated

within the orbit." By continuing these two remedies in alternation every eight days, in the course of a month and a half the whole fungus had disappeared, and the eye moved as well as the other in its orbit. At the same time various other constitutional symptoms disappeared. The Field-marshal continued in good health to extreme old age ; and sent a public testimonial of gratitude to his physician.

GENUS VII.—LUES.—1. SYPHILIS.

This disease was unknown to the Greek and Roman physicians, as no allusion is made to it by any of their medical authors, historians or poets ; and much discussion has taken place respecting its first introduction into Europe. All the modern authors who first described it, (collected by Luisinus, Astrue, and Girtanner) in the latter years of the fifteenth century comment upon it as " *morbis novus*," " *morbis gnotus*." Peter Pinctor traces the origin of the disease to the time of the conjunction of Mars, Venus, Jupiter, and Mercury, A.D. 1483, at which time he thinks this disease must have originated ; but Fulgosi dates it at October, 1492 ; Sanchez and Hensler in 1493. Others contended that it originated in Hispaniola. It is certain, however, that it was first distinctly recognized, says Dr. Simpson, of Edinburgh, during the invasion of Italy by the victorious army of Charles VIII. of France ; and it first broke out extensively at Naples when the French took possession of that city in the spring of 1495. This army carried the disease with them to France, Switzerland, Germany, Flanders, &c. In 1497, it had reached Aberdeen in Scotland. Six months later the new disease was made the subject of municipal regulation in Edinburgh. Infected persons were banished from the town to the sands of Leith, there to remain " till God shall provide for their health." Those who took upon then the cure of the infected were banished with their patients, and if either should return to the city in violation of the edict they were to be burned on the cheek with a branding iron. James IV. who was then king of Scotland was much engaged in experimental researches after the philosopher's stone, or the " *quinta essentia*," and was withal learned in the arts of medicine and surgery. In his practice of surgery he was more liberal than any philanthropist of our noble profession of these days. He not only bled his patients for nothing, but gave them eighteen shillings Scotch into the bargain. The record shows that his operations were not always successful. One woman with cataract was left entirely blind, for which a partial atonement was made by the usual eighteen shillings, Scotch.

The experience of this king in the treatment of syphilis is not recorded, but the sums of money given by him to patients affected with it are regularly set down to his credit.

Wm. Dunbar, the Scottish poet to the royal household, who preceded Burns by nearly three centuries, employed his genius in commemorating the coming in of the new plague. Gunbrecht and Brandt wrote in 1496, that the disease had already invaded France, Germany and Britain. In 1502, the privy expense book of Elizabeth of York, queen of Henry VII., shows that the benevolent lady paid a surgeon for curing a certain mendicant of the French malady the sum of twenty shillings. During a great portion of the sixteenth century, it was so contagious in some parts of Europe, that it was communicated by lying in the same bed, by the clothes, gloves, money, or breath of the patient. A variety of syphilis also prevailed in Canada some years ago, of so virulent a nature, that it was communicated by the breath and by contact.

Dr. Thompson, "thinks it probable that the disease has existed, more or less, and under different grades of severity, in all ages, and that it has thousands of times been originated *de novo*."

Professor Simpson, from a historical review of the earliest notices of syphilis on record, arrives at the following pathological opinion:

I. That syphilis was a species of disease new to Europe when it first excited the attention of physicians and historians in the last years of the fifteenth century.

II. That it is a species of disease distinct and different alike, first, from gonorrhœa; and, second, from Greek leprosy, (with both of which diseases it has been occasionally confounded); for both of these maladies existed and were abundantly recognized in Britain long before the date of the introduction of syphilis.

III. When the disease first broke out it was regarded by physicians and the public as communicable, and constantly communicated from the infected to the healthy by the employment of the clothes, vessels, baths, &c., used by those suffering with it, and by the slightest contact, or even breathing the same air with them. One of the gravest charges against Cardinal Wolsey when he was arraigned before the House of Lords in 1529, was, as given in the indictment; that "the same Lord-cardinal, knowing himself to have the foul and contagious disease of the great pox broken out upon him in divers places of his body, came daily to your grace (the king) rowning in your ear, and blowing upon your most noble grace, with his perilous and infective breath, to the marvellous danger of your highness, if God, of his infinite goodness, had not better provided for your highness," &c., &c.*

For many years after its outbreak sexual intercourse does not appear to have been suspected as the mode of its propagation; the primary affections of the several organs were not noticed as constant symptoms. Their attention was chiefly directed to the secondary symptoms, such as: The hideous eruptions on the skin, the ulcers of the throat, the

* Lancet, 1861, p. 172.

exostoses, and nocturnal pains in the bones, &c. The rapidity with which it spread over Europe led men to suppose that it travelled as an epidemic without waiting for the slow process of communication by contact. It was on the 4th of Dec., 1494, that the army of Charles VIII. entered Rome; they reached Naples February 21st, 1495, and evacuated the city May 20th. On the 24th the Spanish general Cordova landed in Sicily. The battle of Fuornovo was fought July 5th, king Ferdinand returned to Naples the next day. The last remnant of the French army returned to France about the end of the following year. Within less than two years the Aberdeen edict was issued (April 23d, 1497), only forty-eight days after that of Paris, which was dated March 6th. The disease soon swept off vast numbers of the dissolute princes and dignitaries in all countries. The emperor Charles V., Pope Alexander VI., kings and cardinals, princes and bishops, peers and priests, are recorded among its victims. Indeed the manners of the dignitaries of every nominally Christian country were so much worse than the masses were able to believe, that they stealthily transmitted this most loathesome of all diseases so rapidly from one city to another that the malady itself was at first mistaken for a pestilential epidemic.

The causes which may have conduced to vary its character at different periods, are numerous; and we suggest the following as a few of them.

It has been observed that exposure of the body to a cold, humid atmosphere, excessive fatigue, changes of diet and of climate, unwholesome food, and neglect of cleanliness, favor the rapid progress and destructiveness of the malady; while a dry, warm and equable temperature, cleanliness, nutritious food, and comfortable lodgings are circumstances which conduce to render it comparatively mild. Thus its violence during the siege of Naples in 1495 may also be explained, when we bear in mind the forced marches, the changes of climate and of diet, and the constant excitement and fatigue to which the soldiers were exposed. The same severity marked its prevalence in the British army in Portugal, while the natives themselves were but slightly affected, although exposed to similar contamination.

One of our army surgeons recently informed us that the same difficulty was experienced among our soldiers during the Mexican campaign in 1847, and 1848; they contracted the disorder, while the Mexicans experienced but slight inconvenience, although exposed to the same virus. The argument also holds good with respect to sailors who are so constantly subjected to the vicissitudes of temperature, the noxious air of vessels, and the stale, salt provisions used at sea.

May it not, then, be fairly inferred, that whatever causes impair the forces of the organism, serve also to render it less able to resist the deleterious influence of the syphilitic poison?

In regard to the doctrine of Hahnemann respecting the identity of *syphilis* and *sycosis*, we agree with Hartmann, that the mass of evidence upon the subject renders it almost conclusive that the two diseases are distinct in their nature. The origin of each is a specific morbid poison, capable of impressing the organism in a distinct and peculiar manner.

Diagnosis.—There are unquestionably a great variety of ulcers which make their appearance upon the genitals, communicated by contact with diseased subjects, which are, nevertheless, not syphilitic, and which will heal over without causing constitutional symptoms, simply by the aid of mild dressings. The true syphilitic chancre is now of rare occurrence, but the great majority of those intractable ulcers which are looked upon as real venereal chancres, are nothing more, primarily, than simple non-infectious sores, which have been converted into an unhealthy condition by the abuse of mercury. Who can doubt this fact when he contemplates the dreadful effects which a course of mercury often produces on the healthy organism? who could be tempted, in health to take the enormous quantities of this drug which are deemed necessary for the cure of syphilis? Let the provings of it —let the horrible consequences which its accidental absorption sometimes occasions upon the surface,—in the mucous membranes,—the bones,—the glands and the nervous system, answer. For our part, we would prefer the syphilitic poison itself, rather than the uncontrollable ravages of such an enemy as mercury in allopathic administrations is admitted to be by the fair-minded of those even who most earnestly defend its use.

In order to be fully convinced that many of the effects of *mercury* are improperly attributed to the action of the syphilitic virus, it is only necessary to regard carefully the symptoms which are constantly presented to our observation in what are called venereal affections, and to notice the opinions of many of the most eminent medical observers.

Thus, Sir Astley Cooper in his lectures, used to observe, "do not think that it is a rare occurrence for the penis to be destroyed by *mercury*; no, a chancre that has remained weeks in a healthy state, shall become irritable, and by mal-treatment, by the injudicious and improper use of *mercury* shall slough and end in the destruction of the penis; this is not a rare case, and is attributed to the venereal disease, but in reality is an effect of the improper use of *mercury*." (*Castle's Manual of Surgery*, p. 280.) The great Hahnemann constantly alludes to the pernicious results of the abuse of this drug in the hands of the allopathist.

There can be no question that those dreadful mutilations of the penis, of the nose, the palate, the eyes, of the surface of the body, and the nodes and caries of the bones, which we occasionally observe, are all effects of *mercury* and not of *syphilis*; and it is in the highest

degree probable that the immunity enjoyed by the Portuguese, the Mexicans, and certain other nations, from the severe forms of this malady, is attributable solely to the fact that they use no mercury in its treatment.

Chancre.—The primary chancre usually presents itself on some part of the genital organs, in from three to seven days after contamination, in the form of a darkish red pimple, attended with slight itching, and surrounded by an erysipelatous blush. In a short time matter forms in the centre of the pimple, and an excavated ulcer, with a yellowish surface, hard and ragged edges, and an indurated base, makes its appearance, marking the sore as a true chancre. The most common seat of primary chancre is on the inside of the prepuce and the corona glandis, but it occasionally occurs on the glans and external parts of the genitals.

Many varieties of venereal chancre have been described by authors, as the *simple*, the *indolent*, the *irritable*, the *sloughing*, the *indurated*, the *phagedenic* of Carmichael, the superficial of Mr. Evans, the *Hunterian*, &c.; but as these diversities in the appearance of the chancre are not owing to any difference in the character of the virus, but to the condition of the patient as regards constitution, temperament, and mode of life, at the period of contamination, we should abstain from making those minute classifications which some writers have attempted.

The circumstances which may operate to modify the character and appearance of a simple chancre, or which may conduce to develop primarily an intractable and destructive one, are numerous.

Individuals whose constitutions have been impaired by abuse of stimulants, undue exposure, hardship and fatigue, and insufficient nourishment, are liable to be attacked from the first with that variety which is denominated the *indurated sloughing chancre*.

Those whose systems have been loaded with mercury, and enfeebled by previous disease, are peculiarly subject to that description which is termed *irritable* and *sloughing*. Persons who go from temperate to tropical climates, are especially in danger of the *phagedenic* variety. Scrofula and scurvy also predispose the system to this form of it.

The *simple* chancre is by far the most common, particularly in temperate latitudes, and usually occurs to individuals of a sound constitution. Some have supposed the cause of this variety to consist in "gonorrhœal matter and other morbid vaginal secretions," brought in contact with the penis during coition; but of this there is no proof. The simple ulcer very often becomes converted into an *irritable*, *sloughing*, or *erysipelatous* one, by some excess or imprudence which impairs the vigor of the body, or by the abuse of *mercury*. On the other hand, so long as the constitution remains sound and unimpaired,

resistance is offered to the action of the virus, and the secondary impression which it makes will be very slight, and in some instances imperceptible. It is in cases of this description that we sometimes witness spontaneous cures of what was originally true syphilitic contamination.

The most certain marks of a true syphilitic chancre are: the excavated surface, the hard, ragged edges, and the indurated base. These appearances, taken in connection with the previous history of the case, will generally enable us to decide with sufficient certainty respecting the character of the sore; but where any doubt exists, we would most strongly commend the practice discovered and successfully adopted by Ricord of Paris, of inoculating a sound part with matter from a suspected ulcer. In case a second chancre is produced by this operation, there will no longer remain a question in regard to the true nature of the malady.

After the syphilitic poison has passed from the chancre through the absorbent glands of the groin into the blood, it possesses a specific affinity for only three parts of the body, viz.: "The mucous membrane of the throat and nose; the skin, or surface of the body; and the bones, with their periosteal coverings," (*Sir A. Cooper's lecture*). Thus it will be remarked that the *internal* organs are never impressed by this virus; and this fact should induce the allopath to pause before he loads the system with a poison which spares scarcely a single structure during its operation.

Hunter taught that "the venereal disease" presented "no variety of species," and that "no difference can be produced in the manifestation of the disease by a difference in the malignity of the purulent matter; the same pus exercises, on different individuals, actions totally dissimilar from one another, the diverse nature of which depends on the constitution and the general state of the economy at the time of the infection."* M. Ricord, the most distinguished of French authors on this subject up to a recent date, held the same opinion. In his letters he says (p. 149.) "Up to the present time, we are justified in denying the existence of more than one virus."† But in his latest work which he bequeaths to posterity as his last legacy and the results of thirty years' experience, he admits that "the *chancre* is no longer a *morbid unit*, but a mixed manifestation, belonging to two *DISTINCT pathological species*. The one of these is the *simple chancre*, the other, the indurated or *infecting chancre*. The latter creates constitutional symptoms, the former is one with soft base, an affection *purely local*, which limits its effects to the region which attacks, which *never exercises a general influence upon the system, which is never accompanied by constitutional affections*. In other words it is a

* *Lectures on Chancres*, by M. Ricord, 1859, p. 34. † *On Syphilitic Virus*. Chap. I.
Vol. II.-20.

chancre which does not affect the economy—a chancre without syphilis." Upon this theory a great number of the discrepancies in regard to the origin of the disease may be reconciled. "The simple chancre" existed in the early ages of the world and may be the same referred to in the Mosaic law, and also in the works of Celsus and Galen; the contagious or more malignant disease originated in the 15th century and spread as an epidemic; it consists of the infecting chancre and its constitutional manifestations.*

Diagnosis between simple and infectious Chancre.

SIMPLE NON-COCONTAGIOUS CHANCRE.

"The simple chancre has a soft base, or presents only an inflammatory thickening; it does not react upon the glands, or influences them in a peculiar manner by producing almost certainly an inflammatory, adenite, acute, mono-glandular suppuration, and furnishing most generally an inoculable pus."

"Chancre with edges neatly shaped, and cut perpendicularly; the floor irregular and worm-eaten."

"Chancre ordinarily multiple, or multiplying itself by a series of inoculations of the neighboring parts."

"Chancre with virulent pus, contagious *par excellence* preserving during a long period, the characters which constitute its specificity."

"Lastly, a chancre with a destructive and invading tendency; the form of ulceration the most apt to experience the *phagedenic complication*." M. Ricord, p. 31.

A simple chancre is not found on the head.

Differential Diagnosis.

Dr. Helmuth has gleaned from the works of M. Ricord the following characteristic symptoms of each form of chancre.

SIMPLE NON-INFECTING CHANCRE.

1. Never noticed upon the cephalic region.
2. Develops rapidly.
3. Surface irregular; floor fretted or worm-eaten.
4. Edges neatly shaped, cut perpendicularly, as if cut out with a punch.

INDURATED INFECTING CHANCRE.

1. Every part of the body liable to invasion (therefore chancre on the head may be pronounced infecting.)
2. Develops slowly.
3. Surface smooth; floor lardaceous.
4. Edges sloping, as though made with a gouge.

* Helmuth, U. S. Journ. Hom., Vol. 2, p. 476.

NON-INFECTING.

5. Edges undermined.
6. Border abrupt.

7. No induration.

8. No induration.

9. Suppurates profusely; the suppuration being one of the most fertile sources from which the pus is derived.

10. Pus in the highest degree contagious, persisting during the entire existence of the chancre.

11. Generally multiple from its origin, or becomes so by inoculation.

12. Tendency to invade the neighboring structures.

BUBO.

13. Not necessarily present.

14. Mono-glandular.

15. Suppurating almost certainly, and furnishing most generally an inoculable pus.

16. No fixed period of development.

SIMPLE.

17. The simple chancre is most likely to undergo the phagedenic complication.

18. In virgin subjects transmitted in its form—that is a simple chancre.

19. Transmitted to syphilitic subjects either as a simple or an indurated chancre; the form which is reproduced probably depending on the nature of its origin—that is to say, the chancre which gives birth to it."*

Comparative number of cases.

20. M. Fournier in three months at the Midi in Paris saw two hundred and fifteen cases. Of two hundred and seven of these cases sixty-five had bubo; without bubo one hundred and forty-two.

INFECTING.

5. Edges adherent.
6. Border gradually lost in the floor of the ulceration, giving to the ulcer the appearance of a cupola.

7. Induration surrounding the ulcer on all sides, forming for it a kind of bed (pathognomonic.)

8. Induration commences from the first, (if not produced in a few days, will not become so.)

9. Suppurates little, producing but a small quantity of serosity, most frequently sanguous and ill-formed.

10. Pus rapidly loses its specificity, at all events for the infected subject, who in a few days becomes refractory to inoculation with his own virus.

11. Generally solitary. In most cases a single chancre giving rise to contagion.

12. Inverse disposition. Its limits are soon defined.

BUBO.

13. No infecting chancre without an indurated symptomatic bubo.

14. Affecting several or all the glands.

15. Extreme hardness; independent of each other; no tendency of themselves to inflammation or suppuration.

16. Produced in course of first or second week; rarely noticed later; generally coincident with induration.

INDURATED.

17. Rarely assumes the phagedenic deviation.

18. Transmitted in its species in virgin subjects; that is to say, an indurated chancre.

19. Transmitted to previously infected subjects under the form of a chancre with a soft base, analogous in appearance to the complication.*

* Prof. Helmuth, U. States Journal of Homoeopathy, Vol. 2, 480, 481.

The secondary, or specific effects of the syphilitic virus, after its entrance into the blood, are:

First. Upon the mucous membrane of the mouth and throat, which becomes red and inflamed, and covered in some parts with pimples, which soon degenerate into ulcers, resembling in many respects the primary simple chancre. These ulcerations extend into the nostrils, and sometimes even into the larynx itself, giving rise to loss of voice, severe cough, violent constitutional disturbance, and death. In cases which have been improperly treated, the bony palate and the nasal bones become affected, and exfoliate, and thus cause those disgusting mutilations of the nose and face which so often stare the old-school-physician in the face.

Second. *Manifestations of the action of the absorbed virus in the skin: —*

These are: *Slightly elevated copper-colored elevations* of different sizes, attended with uneasy or itching sensations, sometimes covered with a kind of scurf or scale, or, in other instances, with incrustations or ulcerations. These eruptions make their appearance on the face, head, breast, palms of the hands, and arms. Eruptions, which are called *tubercular*, often appear on the scalp, the eye-brows, the breast, back, and arms, and ultimately form very troublesome ulcers. In healthy subjects these secondary eruptions are not very troublesome, being simply copper-colored blotches, covered with a thin scurf; but in irritable and impaired constitutions they often assume the character of foul and sloughing ulcers. The particular variety of these secondary eruptions will be determined by the peculiarities of constitution in each individual case, and not from any original difference in the virus itself.

Third. *Action of the venereal poison upon the osseous structure, and its periosteal covering.* The morbid inflammation in the first instance upon the periosteum, causing severe nocturnal pains, and some tumefaction in the affected region. If the malady continues to increase, an osseous deposit will be formed between the periosteum and the bone, constituting what is termed *venereal node*. This node, in its early stages, does not usually give rise to much inflammation of the surrounding skin, nor is it attended with a great amount of pain, but after it has existed for a considerable time, and particularly if the patient has been drugged with mercurial preparations, it becomes quite painful, especially during the night. The ordinary location of venereal nodes is on the anterior portion of the tibia, or on the surface of the cranial bones.

We believe that the above enumerated symptoms constitute all of the legitimate effects resulting from the action of the absorbed syphilitic virus. The great variety of eruptions and ulcerations described

by Hartmann and others, are attributable to other causes, operating either by themselves, or in conjunction with the venereal poison. It is of vast importance in affections of this description to distinguish, with all possible accuracy between the syphilitic action and that of mercury, scrofula, and other causes. Farther on we shall endeavor to make this distinction as clear as possible.

Bubo.—Another primary manifestation of syphilis consists in an enlargement of one or more of the absorbent glands of the groin, termed *bubo*. This enlargement usually succeeds the chancre, and is caused by the absorption of the virus of the latter. It is rare in real syphilis that more than one gland in each groin becomes affected with the virus, although some of the other glands now and then become slightly swollen from sympathy. The swelling ordinarily partakes of an inflammatory character, and if not opposed by appropriate remedies, runs on to suppuration, and sometimes to sloughing.

The disease has been supposed to be purely local, until after the swelling in the groin has preceded to the suppurative stage; but this is evidently erroneous, from the fact that secondary symptoms not unfrequently occur, without there having been any previous enlargement in the groin. (See *Bubo, Sympathetic.*)

Bubo sometimes makes its appearance without the previous existence of a chancre, but such instances are by no means common. Swelling of a non-venereal character may likewise occur in the groin from a strain, or from too great violence or bruising of the part. But as chancre for the most part precedes the bubo, there will rarely occur any difficulty in our diagnosis.

TREATMENT.—Mercury. Mercurial Disease.—Keller says, it can no longer be doubted, that the so-called syphilitic ulcers in the extremities of the following character are the result of mercurial cachexia. They are characterized by their grouping and renal form, by their serpiginous advance at their convex border, and their healing and skinning over at their concave border; the same is true of the so-called angina syphilitica, with serpiginous ulcers on the palate, throat, or root of the tongue, giving rise to aphonia, so often described as a characteristic of syphilis. The common reliance is on Iod-potassa for eliminating the Mercury from the system.

Hahnemann, Gross, Hartmann, Hunter, Abernethy, and many other distinguished members of the profession, entertained the opinion that the constitutional symptoms of syphilis are always progressive, and never disappear, unless opposed by medicine; but the fact is now completely established, not only that Mercury is not necessary for the cure of either the primary or secondary symptoms, but that they often terminate in a spontaneous cure *without any medicine.*

We are assured by Dr. Ferguson, and other surgeons, who have

observed the disease in Portugal, that the natives cure themselves permanently of the primary symptoms by topical applications; and of the secondary effects, by decoctions of sarsaparilla and sudorifics. They remark, that "the virulence of the disease has there been so much mitigated, that, after running a certain course, (commonly a mild one) through the respective order of parts, according to the known laws of its progress, it exhausts itself, and ceases spontaneously." (*Med. Chir. Trans.*, Vol. IV., pp. 2 — 5.) This is still further corroborated by the numerous cures of the primary and constitutional symptoms recorded by Messrs. Rose, Dease, Hennen, Guthrie, Good, and Whymper, without Mercury, or any other means than simple dressings. In the cases which they describe, no *caries of the bones* occurred, as is so commonly observed when Mercury is used; "and in no instance was there that uniform progress with unrelenting fury, from one order of symptoms, and parts affected, to another, which is considered an essential characteristic of true syphilis. (*Med. and Chir. Trans.*, Vol. VIII., p. 422.)

Hahnemann, and most of his disciples, as well as Hunter and other eminent allopathists, entertained an opinion that the chancre is simply the *vicarious* symptom of the *internal* disease, and that by removing this ulcer by *external applications*, "the disease is forced to embody itself externally, in the more troublesome and speedily suppurating bubo. And, after this, too, has been removed, as is foolishly done, by external treatment, the disease is forced to manifest itself throughout the organism with all the secondary symptoms of a fully developed syphilis. This *unavoidable* development of the internal syphilitic disease generally takes place after the lapse of two or three months."—(*Hahnemann's Chronic Diseases*, p. 116.)

We speak advisedly when we pronounce this last assumption altogether erroneous; for we have repeatedly seen true venereal chancres cured by topical treatment alone, while the patients have remained entirely free from any secondary manifestations for years afterwards. When a student of medicine, the author passed some time at the United States Marine Hospital, Chelsea, then under the superintendence of the able and accomplished Dr. Stedman. In this institution the internal use of Mercury had been dispensed with in the cure of syphilis, for several years previous to my entrance; and I ascertained that it was a very rare occurrence to observe secondary symptoms in those who had been cured in the hospital, although patients were constantly returning with other complaints, who had been cured of chancre years previous. The treatment chiefly relied on consisted of topical applications of a mild character, the internal use of decoctions of sarsaparilla, and a rigid regimen. The ordinary

period for the cure of Mercury chancre, was from three to four weeks; and for bubo, from six to eight weeks.

So long as the chancre exists, the matter generated in the contaminated part continues to be re-absorbed, and so to supply new fuel to the mass of the blood; it is therefore important to change the morbid action of the ulcer, and heal it up as soon as possible. The matter formed in ulcers of the mucous membrane of the throat, which have arisen from the constitutional effects of syphilis, is also capable of propagating the disease by contact with abraded surfaces, or by being directly re-absorbed into the blood. There is reason to believe, therefore, if all these ulcers be speedily healed by topical treatment, so that the blood shall only contain a given quantity of the virus, this limited amount will gradually become diluted, by the constant addition of new and healthy blood, and by its frequent circulation through the lungs, so that its power to impress the structure is finally lost, and the parts which have already been affected, gradually recover their healthy tone.

In advocating the practice of topical applications, however, we do by no means wish to be understood as placing entire reliance upon them, to the exclusion of other remedies. We only assert that local applications are capable of effecting speedy cures of chancre, thus of destroying these sources of contamination, and placing the blood in the most favorable condition to be purified by the inspired oxygen, by the newly-formed blood and by remedial agents. A morbid action is set up in the chancre, which causes it to generate matter of virulent quality. This is evident from the fact that the matter of buboes and other venereal abscesses, as well as the blood of syphilitic persons, is incapable of causing contamination in the healthy. We repeat, then, heal the chancre as soon as possible, by destroying their *morbid* action, with some local application which shall induce a *healthy medicinal* action, and we have already done much towards abridging the power of the disease. Our admirable specifics, will, then, readily accomplish what remains to be done in perfecting a cure.

The remedial agents which we have found most useful in the management of syphilis, are :—*Topical* :—*Nitr.-argenti*, *Acid-nitric*, *Zinc-chlorid*, *Mercur.-præcip.-rubrum.*, *Kreosote*. *Internal* : The preparations of *Mercury*, *Aurum-muri*, *Thuja*, *Acid-nitr.*, *Sulphur*, *Hepar-sulph.*, *Sarsaparilla*, *Silicea*, *Mezereum*, *Hydr.-potassa*.

In the treatment of chancre, our attention should be directed in the first instance to the cauterization of the sore, in order to change as speedily as possible the morbid action. For this purpose, either of the first-named medicines may be employed, although in most cases we prefer the Nitrate of Silver in substance. After a healthy action has been excited in the ulcer, by these applications, lotions of simple

water may be employed until the cure is established. It will be well to keep a dossil of lint moistened with water constantly upon the ulcer. This course, in conjunction with the remedies advised below, will generally effect speedy and permanent restoration.

TREATMENT OF CHANCRE.—In the treatment of the *simple form of chancre*, if we admit the correctness of the opinions deduced from the largest experience, we have a *local disease*, but it is a *poisonous sore*, which is secreting a poisonous pus, which must be destroyed. The treatment therefore is essentially surgical. As in cases where poisons have been taken into the stomach, we begin with dislodging, or neutralizing the poison before we try to cure the symptoms produced by the poison, so in the case of the simple, non-infecting chancre, we must, says Ricord, "reduce the specific ulceration to the state of common ulcer, and transform a wound possessing a special principle for its maintenance into a wound which has no longer such a resource." (*Helmut*.)

For the cure of the primary infecting sore Mercurius, third trituration, in some form is certainly the most efficient agent.

In the local treatment to be adopted in the simple chancre, Ricord says, we should "reject at once all mild caustics, which only act more or less as anodynes. That which is required in this instance, is a destructive agent." He says, he has successively tried the "Vienna paste, Potass, Nitric-acid, the actual cautery, &c." but proposes a new agent which is peculiarly efficacious. "This caustic consists of Sulphuric-acid, mixed with powdered vegetable charcoal in the proportions necessary to form a half-solid paste." It is proposed by this application to "destroy the poison, and convert the chancre into a simple wound, which will proceed rapidly to cicatrization." Dr. Helmut says, he tried this application in eleven cases of simple chancre with "the most surprising results. Define well the chancre, find it to be certainly the *non-contagious ulcer*, and no internal treatment is required."

Of the *internal remedies*, *Mercury* is the most important. By comparing the pure effects of the different preparations of this drug upon the healthy human organization, with the constitutional effects of the syphilitic virus, it will be observed that the former are capable of ~~removing~~ all the symptoms of the latter, as well as may others which are peculiar to the drug. According to *Pereira*, the effects of Mercury in large doses are:

First. On the mucous membrane of the nose and throat: *ulcerations* of the mouth, gums, throat, and nose, which are often followed by ~~extensive~~ ~~swelling~~ of the parts.

Second. In the skin or surface of the body: *eczema-mercurialis*, ~~syphilis-mercurialis~~, *sputum-mercurialis*, *miliaria-mercurialis*,

and other cutaneous eruptions which bear a close resemblance to *herpes*, *impetigo*, *psydrasia*, and the copper-colored eruptions of *syphilis*.

Third. On the bones and their periosteal coverings: "inflammation of the bones or periosteum, and the consequent production of nodes (*synphoresis periostei mercurialis*.)"

Of all the medicines used in the treatment of lues, says Hahnemann, Mercury is the only one that has stood the test of experience. They coincide in their action in many points. Thus:

The venereal poison produces on the skin pustules, scales and tubercles. Mercury produces similar defæcations of the skin. Syphilis excites inflammation of the periosteum and caries of the bones. Mercury does the same. Lues produces inflammation of the iris; the same is a very common occurrence as a consequence of Mercury. Ulceration of the throat is common from syphilis; the same often results from Mercury. Ulcers on the organs of reproduction result from both the poison and the remedy; thus furnishing another proof of the doctrine of Hahnemann.

Mercury, though a partial similimum to venereal disease, is not a perfect one; and sometimes produces drug-symptoms which obstinately remain beside those of syphilis. There are frequently seen "cases of venereal chancrous disease, especially when complicated with psora, and even with gonorrhœa sycotica, which, far from being cured by considerable and repeated doses of inappropriate mercurial preparations, station themselves in the organism alongside of the chronic mercurial disease, which develops itself gradually, and form together a monstrous complication generally designated by the name of masked syphilis (*pseudo-syphilis*), a state of disease which, if not absolutely incurable, cannot, at least, but with the greatest difficulty, be changed into health." For, "besides the morbid symptoms analogous to those of the venereal disease, which would be capable of curing the same homœopathically, Mercury produces a crowd of others, which bear no resemblance whatever to those of syphilis, and which, when administered in large doses, especially where there is a complication with psora, as is frequently the case, engenders fresh evils, and commits terrible ravages in the body." (§ 41.)

By the above it will be seen that all of those parts capable of being impressed by the venereal virus, are also acted on by Mercury. That the operation of the latter is often more violent and destructive than the former, will not at this day be questioned.

Erythema, lepra, erysipelas, miliary eruptions, herpes, and impetigo are mentioned by Pereira; and others, as skin-affections, which have arisen from the ill effects of Mercury. These symptoms are: ulcerated mouth and throat, periosteal nodes, iritis, and mercurial cachexia, a

morbific state characterized, according to Mr. Travers, "by irritable circulation, extreme pallor and emaciation, an acute and rapid hectic, and an almost invariable termination in phthisis;" a picture of the phenomena following venereal infection, which possesses the truthfulness of a *dangerous stereotype*. The capability possessed by this medicine of producing in a healthy individual the special and collective phenomena characterizing the venereal disease cannot be denied; consequently, when exhibited with the intention of curing the malady the indications of the law, "*similia similibus curantur*" are fulfilled in every particular; yet it is used by the majority of practitioners, who *sneer at homœopathy*." Erichsen, when recommending this mineral, says: "Looking, therefore, upon Mercury as the only remedy we possess that influences directly and permanently the venereal poison, I think that it should always be administered in a full course, during some period of the treatment of constitutional syphilis," (*Principles and Pract. Surgery*, Erichsen, p. 426.)

But in addition to the symptoms just enumerated, Mercury, in large doses, causes almost innumerable other symptoms, which have no bearing upon the subject of this chapter, except as indicating its danger in the hands of allopathists.

In the above quotation from a distinguished allopathic writer the analogy between the effects produced by the *venereal* poison and those produced by *Mercury* may be seen; and the difficulty of distinguishing between mercurial and syphilitic in the old school mode of practice may be readily inferred.

For an accurate and complete description of the pure effects of *Mercury* upon the healthy organism we refer to the provings of Hahnemann and other homœopaths.

Hahnemann preferred the fluid Quicksilver, carried up to the *decinquecenti* degree, over all other preparations in the treatment of both primary and secondary syphilis.

For the cure of primary chancre, Hartmann recommends the first or third preparation of *Mercurius-solubilis*, in doses of one grain, night and morning. If no improvement occurs within the first eight days, he gives a lower trituration of *Merc.-precip.-rubrum*, in doses of a *centesimal* of a grain, two or three times a day. In the *Hunterian*, *indurated* and the elevated *indurated* chancrea, Hahnemann employs the *Hydriod.-precipitate*, in its lower attenuations, from the first

Dr. C. Müller, of Leipsic, is also most decidedly in favor of the *Red-precipitate* or the *Hydr.-sulph.-rub.*, in the treatment of syphilitic chancrea and bubos, in whatever state they may present themselves. He advises a grain of the first trituration to be given twice a day until the ulcers have nearly healed. For painful nodes and other syphilitic adenitis the tincture *Hydriod.-potusse* is advised.

We have also made use of the *Precipitate* at the third attenuation, with marked advantage, in uncomplicated syphilis; and have known the best results, also, from the *Hydr.-mur.-cor.*, in both the primary and secondary forms of the malady. For the cure of troublesome secondary symptoms, in the form of cutaneous eruptions, glandular enlargements, and nodes, the *Protoiodide of Mercury* has extraordinary power. Speedy cures have been effected by it after the other mercurial preparations had failed. It may be used at the third attenuation, in doses of a grain, twice a day, until the eruptions disappear.

Only against syphilis, says Dr. Wolf, Mercury and Iodine are indispensable. "Pure syphilis requires Mercurius; for the combination of syphilis and sycosis, Iodine—only one dose 30° must be given. Where a cure is not affected by it, it is a sure sign that one or the other of the following three impediments hinders the cure :

1. Abuse of Mercury or Iodine. The first can be remedied by one dose of Mercury, 6000°, the second by Iodine one dose, 5000°; where both have been abused, it is necessary to give, first Mercury, 6000°, and afterwards Thuja, 1000°.

2. The second impediment is the predominating influence of the psoric poison. This requires one dose of Sulphur, 30°, or in case of abuse of Sulphur, Sulphur, 6000° (after the previous dose of Mercurius 30° has left the case unfinished.)

3. The third impediment is the predominating influence of the sycotic poison. (See *Sycosis*.—Index.) Syphilitic ulcers require Kali-bichromate, 30°, one dose, where the cure remains unfinished; after it Sanguinaria 30°."

M. Diday, in advocating the treatment of infantile syphilis indirectly through the medium of the milk, (in answering the objection that chemistry is not able to detect infinitesimal doses of medicines in the milk when thus charged with Mercury, says:) "I am willing to admit that chemistry has for the present told us all it can tell. Must this *infinitesimal* quantity of Mercury be estimated in reference to its curative power, by that of the salts which we dissolve in our laboratories? An extremely small quantity of Sulphur or of Alkali contained in the waters of Barèges or Vichy cures, in twenty-five or thirty days, affections which had previously resisted the largest *officinal* doses of Sulphuret of Potassium or Bicarbonate of Soda. Has nature denied herself the same privilege in the combination which she effects in the living organism? A vulgar adage tells us that a man lives by what he digests, not by what he eats. In the same way, it is the remedy absorbed, not the remedy ingested which effects the cure. And if a molecule of Mercury, reduced by the milky secretion to the state of combination most conformable to the special conditions presented by the child, and reaching the stomach continually arrives there in a

form and at times in which its passage into the absorbent system is ensured,—if, moreover, this molecule (as facts prove) suffices to cure it,—in the name of what science can its effects be compared to those of the portion of a salt which we force it, twice a day, to swallow repugnantly, without even knowing whether it will not immediately be rejected and passed off with the stools." (*Infantile Syphilis, Diday, New Sydenham Society*, p. 240.)

When syphilis is complicated by psora, or any other chronic disease, suitable remedies should be alternated with the mercurials.

Muriate of Gold ranks next in importance to *Mercury*, as a remedy in secondary syphilis. The late Taft, of New-Orleans, employed it in secondary ulcers and eruptions which would not yield to *Mercury*, with the most gratifying results. In syphilitic eruptions of long standing, we have often administered it with entire success. The second or third trituration may be employed, in half grain doses, night and morning, as long as is necessary.

Nitric-acid will be serviceable in many cases of ill-conditioned chancres, which seem to withstand the curative force of *Mercury*. It is also of great value in contracted secondary cases, accompanied with emaciation, debility, caries of the bones, unhealthy ulcers upon the surface, and great derangement of the nervous system. If these symptoms have been aggravated by abuse of Mercurials, the indication is still stronger for the Acid. The first, second and third dilutions are to be preferred in these cases, a dose to be given twice daily until the disease yields.

Sulphur, *Hepar-sulph.*, and *Hydr.-sulph.-rubr.*, are the proper specifics when the chancre occurs in psoric constitutions. As a general rule, the two first should be alternated with some mercurial preparations.

Hydr.-potassæ, is eminently worthy of consideration in the indolent glandular swellings which sometimes originate from a combination of syphilis and scrofula. It is also an efficient medicine in the treatment of venereal nodes.

Silicea, *Mezereum*, and *Sarsaparilla* are often valuable auxiliaries in syphilis complicated with scrofula. These medicines should also be given in alternation with some other suitable specific.

In conclusion, we call attention to the following reliable mark of cure alluded to by Hahnemann in his *Chronic Diseases*: "So long as the original spot upon which the chancre had been developed, exhibits a reddish morbid looking, red, or bluish scar, we may be sure that the internal disease is not completely cured; whereas, if the chancre has been removed by the internal remedy, the original spot of the chancre can no longer be traced, on account of that spot being covered by a healthy-colored a skin as the rest of the body."

TREATMENT of Secondary Syphilis.—Secondary syphilis consists in the introduction of a poison into the blood; and the cure of it, in the neutralization of that poison.

The attainment of this object must be sought in the careful, judicious, and prolonged use of medicines; and in the adoption of such measures, hygienic and dietetic, as are best calculated to sustain the patient's constitutional powers.

First, then, as regards medicines. It is beyond a question that, as with the original sore, so with many of the constitutional symptoms which result from it, *Mercury* is one of the most efficacious remedies. We constantly meet with cases in which the primary and secondary diseases coexist, and in which the Mercury given for the one cures the other at the same time, several examples of this are reported further on. There is commonly in these instances this advantage, viz., that Mercury has not been previously administered and it is precisely in such cases that the curative action of the medicine is most decided. The same thing holds good with reference to the secondary symptoms. If Mercury has been given to any considerable extent for the cure of the chancre, the benefit to be derived from its administration in the treatment of secondary symptoms will be much less marked, than in those cases in which it has been given in very minute quantities, or not at all. In either of the latter instances, unless there exist some special circumstance to forbid its use, Mercury is often of the utmost value in combatting the earlier secondary diseases of the skin; the erythema, papules, and squamæ. Over the more inveterate eruptions, it has comparatively little power. When, therefore, a well-marked and undoubted case of secondary eruption presents itself, following closely, or at no great distance upon the primary disease and in which the patient has not been mercurialized, it is well to commence the treatment with one of the lower dilutions of the Iodide or Bin-iodide of Mercury—the second or third decimal, in two-grain-doses, twice a day. This should be steadily persisted in until the eruption has vanished, or until it appears certain that the medicine has effected all the good that can reasonably be looked for from it. In many constitutions these eruptive disorders are remarkably obstinate, and no remedy will exercise a sudden influence over them. The Mercury having had a fair trial, if it fail in effecting a complete cure, another medicine must be resorted to.

Kali-hydriodicum claims our next attention; this is a remedy of undoubted power in treating the secondary diseases of syphilis; and in the majority of cases of skin affections, as well as affections of other tissues, its aid is required in expediting or completing the cure. In obstinate cases, especially those occurring in scrofulous constitutions—and they are the most obstinate, it is a good plan to give this medicine alternately with the Bin-iodide of Mercury, not in alternate doses, but during

alternate weeks, i. e. the *Kali-hydriod*. one week, the *Mercurius-biniodidus* the next and so on. Excellent results will often spring from the alternate action of these and other remedies; and the more so, the less rapid the alternations. To obtain its full curative action in syphilitic diseases, the *Kali-hydriodicum*, like the preparations of Mercury, must not be administered in too small doses. "I am in the habit of giving two grains of the salt three times a day, in aqueous solution. The principal indications for its use are—a serofulous and debilitated constitution; enlarged glands in the groin, the throat or neck; the previous exhibition of Mercury in excess, marked by red and inflamed gums, sore throat, foul breath, nocturnal bone-pains."—(*Yeldham.*)

It was at one time the almost universal persuasion, that secondary syphilis was incurable, and even now this opinion has its adherents. On the other hand, there are those who, more sanguine than wise, do not hesitate to promise their patients speedy and permanent cure. The truth, as in most other cases, lies between extremes. There is no doubt that in recent cases of secondary disease, occurring in good constitutions, and where the system has not been saturated with Mercury, complete and permanent eradication of the symptoms may be safely prognosticated. On the other hand, it is equally certain that, when the taint has once entered the circulation of persons of depraved, serofulous, and broken-down constitutions, it may but too confidently be predicted, that, though secondary symptoms may, for a time, appear to be successfully combatted, relapses will occur with more or less virulence for many years, and, possibly, for the remainder of the patient's life.

* The treatment in former times, of primary syphilis with destructive doses of Mercury, by inducing the very state of the system, I have just described, had much to do with the development of secondary diseases in their most inveterate and intractable forms. Modern science, better instructed, obviates much of this mischief, by avoiding the use of Mercury altogether in treating some cases of primary ulcer, and by giving it in more moderate quantities, when it is employed. Still, I am convinced there is room for yet greater improvement, and that homœopathy points out the way to it; and to this important point we now proceed to direct our attention."

The connection of psora and syphilis, says Dr. Wolf, is proved by the fact that since the appearance of syphilis the lepra has become very scarce.

The syphilitic dyscrasia has three characteristic peculiarities:

1. Want of flexibility of the limbs, which refuse to obey the impulse of the will. The joints, on moving, make a painful crepitating noise.
2. Shuddering when going to stool, and, 3. sleeplessness without apparent cause.

Dr. Wolf says, primary syphilis may remain stationary for twenty years; but if the chancre is treated actively, and Mercury in large doses be given, and the ulcer healed by force, the *slow chancrous dyscrasia* is generally the result.

The outbreak of the secondary symptoms is, generally, caused by taking a severe cold, often showing itself in an attack similar to acute gout. The combination of the syphilitic and mercurial poisons greatly aggravates all pre-existing morbid conditions; the liability to take cold is greatly augmented, the worst form of coryza, with offensive corroding secretion is produced, the glands are affected, and a great disposition to parenchymatous inflammations, ulcerations, dissolution of the blood, &c., is produced.

But all this suffering Mercury alone can produce, without its combination with syphilitic poison. Mercury and Iodine are the very worst poisons, and should never be used but in syphilis. The affections of the mucous membrane, so often treated by Mercury, will also yield to *Apis*. *Serofula*, tubercles, tumor, and goitre will also yield to *Thuja*.—(Wolf.)

Treatment of the Diseases of the Mucous Membrane.—These diseases, as has been already suggested, are often, induced by exposure to cold. When so induced, if the patient be at the time, or has recently been, affected with syphilis, these cases acquire a peculiar character from that circumstance—they become chronic, secrete copiously and the tonsillary glands may become much enlarged, and deeply ulcerated. These attacks though of a syphilitic type, have their origin in catarrh and their early arrest may sometimes be effected by the usual remedies for catarrhal sore throat, viz.: *Aconite*, *Bell.*, *Apis*, and *Mer.-corrosivus*. After *Aconite* has been exhibited to reduce any general febrile excitement, as well as to act on the local disorder, *Apis* is often very efficacious, in drop doses of the third decimal tincture. If it fail, *Belladonna*, *Lachesis*, and *Merc.-corr.* may be had recourse to.

In cases of inflammation, or ulceration, of the same part, in company with other secondary symptoms—of the skin, for example—if Mercury have not already been administered to excess, the Iodide or Bin-iodide of that metal, in one grain doses of the second or third decimal should be administered twice a day. The throat will often get well *par-passu* with other symptoms; but should the disease persist when these have vanished, the treatment may be directed against it especially. *Acidum-nitricum* is here a useful remedy, and may be given internally, in five-drop doses of the second decimal tincture, three times a day; and at the same time a gargle, composed of the pure acid of half a drachm in six ounces of water, may be employed locally. This though beneficial in some cases, is far less efficacious than the *Argentum-nit.*

"This may be applied in its solid form when practicable, or in solution, in the proportion of five grains to the ounce of distilled water; the throat should be mopped with this once or twice a day. I employ this medicine in one of these forms in the majority of cases of syphilitic sore throat, and the comfort derived from it is immense."

It is beyond dispute that some persons are more susceptible than others to constitutional syphilis. It is equally certain that the scrofulous constitution is that which is most exposed to its attack. That being so, the importance of attending to the general health of the patient, during the course of secondary syphilis, is self-evident. He should carefully observe all those measures calculated to maintain his health in the finest possible condition. In those early secondary diseases of which we have been speaking—of the skin and throat—being, as they commonly are, inflammatory and febrile, he should indulge in alcoholic drinks very sparingly, or not at all, at least in the earlier stages. He should live on plain, good nutritious food. In keeping with this, as well as in reference to the depression of the general powers which commonly characterize constitutional syphilis, *Cod-liver oil* is an agent of first-rate importance. "Possessing the advantage of not being medicinal, and therefore not interfering with the action of medicines, I find it in many cases more than a substitute for the renowned sarsaparilla—a medicine which, when there is no particular indication for other remedies, may be prescribed with the greatest advantage. A small quantity of cod-liver oil is sufficient—a dessert-spoonful, taken every night at bed time. Larger quantities, taken at other periods of the day, are apt to do more harm than good by nauseating the patient, and destroying his appetite. If the throat or mouth be affected, he should strictly avoid smoking. He should not over-fatigue himself. For skin diseases he should take a warm bath twice a week. He should clothe himself judiciously, and carefully guard against the common causes of cold."—(*Yeldham*.)

The following medicines may, also, be administered with manifest benefit, viz.: Acid.-sulphur., Borax, Lachesis, Phosphorus, Hepar-sulphuris, and Sulphur.

Clematis erecta.—(Ruckert.) In one case of chronic bubo the tumor had persisted after the suppression of a blenorragia. It was of oval form, of the size of a walnut, and the integument was of a deep red, for five years, allopathic remedies had failed; the *Carbo-animalis*, *Mercurius*, *Hepar*, *Sulph.*, *Iodium*, and *Silicea* were given for three months without result. *Clematis* made a cure in eight days.

Syphilitic diseases of the bones.—Syphilitic affections of the nose require *Aurum 200°* one dose every twenty-four hours for seven days.—(*Wolf*.)

Tophi, exostoses, &c..—They are only produced by the abuse of

Mercury, therefore Mercury 6000° must be given. Where caries has already set in and the cure does not progress after that dose of Mercury, Silicea 30° is the best remedy, and this potency is the best. Where in the most severe cases Silicea cannot accomplish the cure one dose of Sulphur 30° is yet required. Where the bone pains do not quickly yield the Mercury, Apis 80° in dilution, or Aconite and Apis in alternation will be likely to succeed.

Softening of the bones, swelling and curvature, yield to Acid-fluoric 2000°, one dose. (Dr. Wolf.)

Brittleness, dessication, and fragility of the bones. These yield to Calcarea-carb. 200° in dilution, one dose daily for five days.

Nodes.—Case by Dr. Helmuth.—A gentleman applied for relief for ulcerated nostrils, enlargement of the turbinate bones, and a node which gave intense pain. The patient had been mercurialized for syphilis two years previously. I gave him the third trituration of Aurum-mur, followed this with Mezereum, and Asafœtida, and cured him in four months.

Syphilization.—In 1844, M. Auxias Turenne, of France, commenced a series of experiments with the object of testing the correctness of John Hunter's opinion on the non-communicability of syphilis to the lower animals. By inoculating monkeys with chancre matter Turenne succeeded in producing a disease having all the characteristics of a true chancre; also communicated true chancre from animals to the human subject. Finally he reached the conclusion that, by a prolonged series of successive inoculations with the syphilitic poison, a constitutional state or diathesis was at length produced in which the system was no longer susceptible to the action of the syphilitic virus; as a person who has had small-pox cannot take the disease a second time. Though the proposition of Turenne to treat syphilis by repeated syphilitic inoculations was rejected by the French academy of medicine in 1850, the experiment was tried on a large scale in various hospitals. In May, 1851, Sperino of Turin reported fifty-two cases treated by syphilization. These cases showed that by a regular course of successive inoculations, all venereal symptoms of all former infections were eradicated. All old "ulcers healed, and buboes, recent nodular enlargement of bones, and cutaneous stains or blotches disappeared altogether."

Professor Boeck, of the university of Norway, in a work published in 1854, says, he has cured the "most inveterate cases of syphilis by subjecting the patient to a series of inoculations, at intervals of six, five, or three days, and permitting the chancrea thus produced to run their usual course. This mode of inoculation consists of making several small punctures at one time on the arms or thighs. These punctures become real indurated chancrea in about five days. Before these have reached the stage of induration, others may be initiated in the neigh-

boring parts, and thus the process must be kept up until complete immunity is attained; and when this point is reached all the old symptoms of syphilis gradually disappear. It is not proposed by these authors to practice syphilitic inoculation for the purpose of producing immunity from new attacks, but for the purpose of curing those terrible cases of the disease in which all common measures would fail if tried, and in which extraordinary measures have proved worse than the original disease.

Symptoms which have been Cured by Syphilization.—Ecthyma syphilitica of the whole body; syphilitic tubercles between the toes, in the fauces, in the angles of the mouth; pains in the legs; pains in the clavicles and in the humeral bones; psoric eruptions on the palms of the hands; general debility; large syphilitic sores on the left thigh in one case which had been treated with mercury in childhood for inherited roseola syphilitica, and ulcers of the throat; papular syphilitic affection of the throat; syphilitic lichen; syphilitic tubercular affection with syphilitic serpinginous lupus; fever with erysipelatous eruptions near the chancres caused by inoculation; sores on the lower limbs; roseola syphilitica on the face, breast, and thighs; mucous tubercles over the inner surface of the labia, and also on the mucous membrane of the mouth; papular eruption over various parts of the body; ulceration of the fauces and genitals; syphilitic iritis. In some cases in which mercurials and Iodide of Potassium had been tried without benefit, syphilization only partially carried out, has rendered the system susceptible to the curative influence of either of these remedies. In all the cases reported, there has been an evident and progressive improvement in the general health; and no relapses occurred. How far the process of syphilitic inoculation may hereafter succeed in eradicating the venereal virus from the diseased constitutions of degenerate and suffering humanity remains to be seen. The destructive operations of four centuries of progressive poisoning are around us. M. Auzias Turenne proposes to make the chronic miasm of syphilis available on a principle analogous to that under which vaccination triumphs over and averts the ravages of small-pox.

Transmission of Syphilis by Vaccination.—That the secondary symptoms of syphilis can be inoculated on persons who *have never been infected with the disease*, has been thoroughly proven by experiments and the clinical experience of a great number of observers in this country and in Europe. Until the time of Hunter, syphilis in every stage was believed to be highly contagious, and contact with any of the secretions, or even exposure to the breath of those suffering from constitutional infection, was dreaded. Hunter tested the communicability of the secondary lesions by numerous inoculations upon those who *had already suffered from syphilis*, and all failing, he estab-

blished the dogma that the secondary manifestations of the disease are not inoculable. It was believed to be morally wrong to inoculate persons with syphilis who had not already experienced it, and the erroneous conclusion of Hunter was permitted to pass without correction. But recent and direct experiments "on persons who have never had the disease, and accumulation of evidence from clinical experience," have compelled the most persistent adherents of Hunter's teaching to acknowledge that the secondary symptoms of syphilis can be transmitted by inoculation to persons who have never been infected by it; and that the analogy between syphilis and some other infectious diseases is sufficiently demonstrated.

Syphilis has been repeatedly communicated by means of pus from syphilitic ecthyma pustules, from the secretions from condylomata, and from specific ulcerations of mucous membranes by inoculating persons who never had the disease. "The blood of a syphilitic patient has also been made the means of communicating the disease by applying it to a scarified surface on a non-infected subject."

"It is perhaps from direct inoculation with the blood of a syphilitic patient, the lancet being charged with it, that the operation of vaccinating has been the means of introducing syphilis; yet there is a considerable amount of evidence in favor of the possibility of inoculation through clear vaccine lymph and pus. A number of observers, mostly French, have given their attention to this subject, and the evidence certainly seems conclusive in favor of the propagation, not only when the blood of syphilitic persons had been used alone, or mixed with the virus, but when only lymph from the vesicle had been introduced.

"We believe that enough has been adduced in proof of the occasional infection of syphilis through vaccination, be it either blood, lymph, or pus, to induce practitioners to be exceedingly cautious in the selection of virus, and it is with the object of impressing this caution that we now discuss the subject." It is not an uncommon thing, as every practitioner knows, to see ordinary eruptions on the skin of children attributed to vaccination, yet it is probable that real syphilitic disease, introduced by vaccination, has sometimes appeared, and not been recognized, because not suspected.

"It should be borne in mind by observers that vaccination with pure matter is sometimes the exciting cause of syphilitic eruptions in infants already under the syphilitic diathesis; in the same manner that it gives rise to non-specific eruptions in strumous subjects. The history of the case, and the order of evolution of the symptoms are generally sufficient to establish the diagnosis. For instance, the appearance of the eruption within a few days or weeks after vaccination, without the ordinary period of incubation of syphilis, will render it

probable that the disease was already latent in the system."—(Bumstead on *Venereal Diseases*.)

In regard to the selection of vaccine matter, with a view to insure safety from syphilitic taint, the following rules have been laid down:

1. Examine carefully the child from whom the lymph is taken.
2. Try to learn the state of the parents' health.
3. Choose, in obtaining lymph, such children as have passed the fourth or fifth month, as hereditary syphilis, in general, appears before that age.
4. Do not use the lymph after the eighth day of the existence of the vesicle, as the lymph on the ninth or tenth days becomes dull, by mixture with pus, which latter may be of an infectious nature.
5. In taking lymph with the lancet, avoid haemorrhage, as there is less danger with pure transparent lymph.

In a recent publication a record appears of the communication of syphilis to forty-six children by vaccination in the village of Rivolta, Piedmont. In these cases the symptoms of syphilis appeared on an average on the twentieth day. The symptoms of genuine syphilis by vaccination, after a regular incubation period, would be fever and debility, papules on the skin, pustules, swelled lymphatics, ulcerations of the mucous membranes, &c. The principal appearances noted after the disease had existed some time, in the forty-six cases alluded to, were mucous tubercles on the verge of the anus and genital organs, sores on the lips and fauces, swelling of lymphatics, syphilitic eruptions, induration of the cellular tissue, &c.—(*Med. and Surgical Reporter*, May 17, 1862.)

Dr. Whitehead says, syphilis may be communicated through the atmosphere. It may also be transmitted through lactation: the nurse may infect the child, and the child the nurse. It may be communicated by inoculation, by vaccination, and by contact of the raw surface. Bietts says, it may even be communicated through the sound skin: "that there are certain forms of syphilis with which every species of contact may prove dangerous."

Tartar-emetic is recommended by Dr. Smee for syphilis. He gives the first and second triturations every four hours. Dr. Willebrand, of Finland, says, it alone cured cases of primary chancre in from ten to twenty days; no application but water dressing was made to the sore. In a few cases it failed where there was much induration. It has cured secondary syphilis and syphilitic eruptions, aided only by cleanliness, repose, and regulated diet. In bubo it has succeeded in reducing the inflammatory swelling.

Tartar-emetic often reduces the swelling and the pain in orchitis.

Nitric-acid.—Where the blood has already a great tendency to dissolution, with great want of strength, sugillations of blood, bleeding

from the nose, lungs, or intestines, with a scorbutic state of the gums, Nitric-acid is the proper remedy. In chronic cases, says Dr. Wolf, one dose 30°; in more acute cases, one dose 30° every twenty-four hours for three days; and in the worst cases, Nitric Acid 30° in dilution, every one to three hours, till amelioration takes place. Inflammation of the lungs on syphilitic ground is also to be treated by Nitric-acid, and where this does not suffice, Sanguinaria 200°, every three hours.

Lycopodium.—Where the syphilitic poison has concentrated itself on the liver, and consensually affects the spleen, kidneys and genital organs, Lycopodium 200° is the proper remedy. Magnesia-muriat and Natrum-muriaticum only aggravate the symptoms in such cases, even where they seem to correspond to the symptoms. This explains why the sea-bath is so injurious after syphilitic affections.

Lycopodium is the best remedy in those dangerous uterine haemorrhages in syphilitic and mercurial cachexia. We give the 200° in dilution every three hours; and the same remedy holds good in cases of bloody urine, of hypochondriasis and hysteria, originating in the above-stated combination of the syphilitic and mercurial poisons.—(Wolf.)

2. SYCOSIS.

Dr. Wolf says, "the third great impediment to the cure of syphilis is the predominating influence of *sycosis*, or the poison of *sycotic gonorrhœa*." The sycotic poison is the result of a combination of psora and syphilis in their highest potency. "It is a *dyscrasia* which has spread fearfully, and in a hitherto inexplicable manner, since the beginning of the present century; so much so, that if this progression should continue on at the same rate, the very existence of mankind is in jeopardy."

The sycotic poison greatly increases the disposition to all those every-day illnesses, and it renders all diseases more obstinate and pernicious.

Affections produced by Sycosis on the different Organs.—Affection of the teeth with loosening of the roots and falling out, with the most obstinate form of prosopalgia, alternating sometimes with the most insufferable cephalalgia; affections of the mouth, with cracks on the lower lip, with peeling of the epithelium, small flat, whitish ulcers, &c. Hypochondriasis; pain in the muscles, spasms, giddiness, deadness of the tips of the fingers and toes; constipation, breath smelling like carrion, affection of the mucous membrane, and inferior character of its secretions; tubercles, warts, fungous excrescences, varicose veins, deposition of bacon-like fat, gout, chronic catarrh of the urinary organs, Bright's disease of the kidney, diabetes mellitus.

Dr. Wolf supposes small-pox to be the efflorescence of the sycotic poison, and that vaccination is the channel through which this virus is often communicated. He says the most prominent symptoms of sycosis, after syphilis or leucorrhœa, without any previous affection, are sometimes observed as the result of vaccination. There is also great tendency to self-abuse, affections of the testicles, ovaries, eyes, ears, teeth, and hairs, weakness of the nerves and head, giddiness, paralytic affections, spasms, and asthma. Chlorosis, anomalies of menstruation, diabetes, tuberculosis, &c., appear as an immediate consequence of vaccination. And most of the above-named diseases are the standing and predominating diseases of the present day.

Dr. Wolf says: Influenza, typhus, and whooping cough, with great tendency to tuberculosis, have also become standing diseases in a hitherto unheard of manner. The "progressive paralysis," a newly described disease; and a common mental disease, described by him as "grosserwahn," are prevailing diseases following upon the continual poisoning of successive generations by impure vaccine or sycotic poison.

The Egyptian ophthalmic-blennorrhœa has become a standing disease amongst the soldiery, and very often follows vaccination, and it is well known that gonorrhœal ophthalmia and the above mentioned form bear the closest resemblance.

Condylomata.—A secondary affection complicated by syphilis and sycosis.

Fig Warts.—"Flattish, pale colored, secreting a very foetid ichor, that come on almost every part of the body, as on the penis, behind the glans, on the scrotum, around the anus, on the thighs; also on the hairy scalp, the corners of the mouth, the lips, especially their red part, on the tonsils, &c. On their apices there are not unfrequently small ulcers, scabs, blisters; those on the face sometimes resemble variolous pustules. Along with them occur syphilitic symptoms in the shape of a tuberculous pustule, like acne or variola, the base of which seems to be indurated. "On the hairy scalp they had a dark red base, were covered with scabs, or had a pustule in their centre." Occasionally, condylomatous ulcers are present at the same time, the surface of which is spongy, dry or moist, and white, not excavated, but nearly on a level with the surface of the skin, or sometimes elevated above it, resembling a wart, and not only on the genitals on both sides, but also, like the condylomata themselves, on other situations. This form of disease is hard to cure, and when cured leaves behind it red elevated pimples, which depart gradually and often leave deep cicatrices.

TREATMENT.—*Tartar-emetic.*—Dr. Kraul of Rastatt employed Tartar-emetic, twice a-day, in the case of a man who had extensive warty excrescences behind the glans. After a week the warts were dimin-

ished in size, and in five weeks a cure was effected.—(*Hufeland's Journal*, Vol. V., p. 241.) In the *Militärärztliche Zeitung*, 3d year, pp. 239, 240, is a case in which Tartar-emetic was found useful in urethritis; also in syphilitic ulcers of the throat, sore mouth, ulcers of the fauces, and primary chancre of the penis. It also cured syphilitic cutaneous affections, and one case of paraphimosis. Of thirty cases treated by it only one had a relapse. (See also *Allg. Hom. Zeitung*. Vol. 21, p. 276.)

Dr. Baertl* says, he began to use this remedy in such cases as the above in 1845, and has been generally successful. When condylomata could be traced to chancre and gonorrhœa, he gave the remedy, one to two grains in six ounces of distilled water, a table-spoonful every three hours. After a week he employed it externally; from three to four grains dissolved in two ounces distilled water; the warty excrencences were moistened with this twice a day by means of a thick roll of lint soaked in the solution. Another piece of rag or lint wet with the same was placed over this, and the part bandaged up. The patient was kept on rather low diet, chiefly of vegetables, farinaceous food, rice, &c. He was prohibited from fatiguing exercise. The remedy was continued perhaps for weeks, though, externally it sometimes occasioned pain; but the patient found his disease improving, and bore it cheerfully. No relapse remembered.

Thuja.—Dr. Wolf gives the following general results obtained from the proving of this remedy on himself as well as on more than one hundred persons of every age and sex, the entire proving having developed 1,050 symptoms. General results:

1. Irritation of the mucous membrane of the genital organs, extending itself over all organs.
2. Changing of the naturally mild secretion into one of an acrid, corroding infectious quality.
3. Over-irritation of the nerves, with tendency to centripetal paralysis.
4. Disturbance of the digestion and sanguification, tendency to destruction, dissolution of the fluids, and of the whole organism. It will thus be seen that *Thuja* corresponds in every respect with the sycotic poison, and thus offers itself as a remedy against the following diseases which are the consequences of the sycotic poison.

Sycotic Gonorrhœa.—The genuine poisonous figwart gonorrhœa is best cured by *Thuja* 30°, one dose being given. In the more recent cases a few days, seven to fourteen, are required. When, however the disease is hereditary, or where abuse has preceded, a long time and the attenuations 300° to 1000° are required.

* *Hom. Vierteljahrsschrift*, Vol. I., part 1.

Iodine is the only remedy that antidotes Thuja. The actions of Thuja should be left undisturbed, and it is seldom necessary to give Aconite as an intercurrent remedy where inflammatory symptoms show themselves.

In some cases the sycotic infection does not show itself by gonorrhœa, but shows itself only in irritation of the genital organs, constriction of the urethra, urging to urinate, wetting the bed, and irresistible desire to self-abuse, which has become common among small children. It has been often traced as its cause to vaccination. The best remedy is Thuja 30° one dose.

Catarrh.—The continued poisoning extending from the mucous membrane of the genital organs upward produce the most severe and lasting catarrhal affection of the intestinal canal first, and afterwards of the respiratory organs. Whitish ulcerations on the corners of the mouth, cracks on the lips, and flat ulcers in the inside of the mouth, &c., characterize it.

Thuja produces all of these symptoms and cures them.

Psoric and Syphilitic Dyscrasia, combined with Sulphurism and Mercurialism.—It seems that Thuja (in high potency) can cure even these cases. In a sycotic ground, the scrofula is changed into tuberculosis; caries is changed into spina ventosa. All diseases have been rendered more or less pernicious and unmanageable by the sycotic dyscrasia produced by the vaccination. The anti-psoric and anti-syphilitic remedies are without avail against these cases. The Thuja alone makes the diseases curable, and the remedies which before the administration of the Thuja, were of no avail, now become efficacious.

Rules for the Administration of the Thuja.—The 30th, 300th, and 1000th potencies have proved the most efficient. In fresh cases, where the patient is free from all inherited or acquired dyscrasias and medicinal diseases, and the younger or the older the patient, the more the thirtieth potency is in its proper place. The older the dyscrasia, and the more complicated the case is, the higher must be the potency.

Only one single dose of one globule must be given; and all crises, particularly severe catarrhal affections, must be left to take their course.

Only in cases of great necessity, the following remedies may be used: *China*, against great weakness.

Ferri-acet., 2, where there is a disposition towards dissolution of the blood. Severe pains may be treated by magnetic manipulations.

Fevers mostly require Aconite, Nux, and Apis. All anti-psoric and anti-syphilitic remedies must be avoided.

The action of Thuja must, in some cases, be aided. This can be done by Tartar-emetic, which is also an antidote to the sycotic

poison, at least as far as it is the result of vaccination. Dr. Wolf says, he obtained very favorable results from Tartar-emetic in influenza, whooping-cough, croup, all sorts of catarrh, typhus, chlorosis, &c. To small children, where there is no danger in delay, one dose of Tartar-emetic 30° should be given; in more acute cases, Tartar-emetic 30° in solution every one, two or three hours; in grown persons Tartar-emetic every two to six hours may be given. The most obstinate forms of megrim, prosopalgia and odontalgia are removed by Argentum-nitr. 200°.

The following remedies act favorably in some cases, though not direct antidotes to the sycotic poison.

Cyclamen.—In diplopia, and one-sided headaches.

Acid-benzoicum, in some cases of diseases of the urinary organs and the heart.

Anacardium in weakness of mind.

The length of time required for a radical cure of sycotic disease differs greatly. In some cases from one, to three, four or five years may be required. But only by adhering to the above rules, which are the result of long and extensive experience can a satisfactory degree of success be obtained; and thus may be restored to mankind the greatest earthly boon that has yet been sought for—*a sound mind in a sound body*.

Helminthia.—Worms in sycotic subjects are best removed by Thuja, which, by antidoting the sycotic poison, cures also the disposition to worms.

Varices, varicocele, haemorrhoidal tumors, black stools, &c., are becoming constantly more prevalent. When they are not cured by the old remedies, Sulphur, Pulsatilla, Lycopodium or Fluoric-acid, they have a sycotic origin, and are best treated by Thuja.

Painfulness and swelling of the liver and spleen; the former giving rise to depositions of fat and pigment and to the formation of sugar; the latter causing chlorosis and leucæmia in women, and cadaverous look and hypochondriasis oftener in men; fatty tumors, the fatty liver, heart, &c., are all cured or prevented by a timely use of Thuja. The same is present in diabetes mellitus, which is often the immediate consequence of vaccination or re-vaccination, and has been observed in children before the age of puberty, a case hitherto unheard of. All these affections of the liver run their course without any symptoms of jaundice.

Degeneration of the skin, nails, and toes is caused by the sycotic poison; also sweating of the hands and feet, panaritium, the pains in the soles or heels not depending on any organic lesions or disorganization of the parts, corns, chilblains, &c. All of these mostly depend on the sycotic poison and are therefore curable by Thuja. The con-

saw both legs swelled at the same time. Instances have, however, fallen under the notice of other physicians, in which both legs became of frightful and prodigious size.

Causes.—Elephantiasis has generally been supposed to arise in consequence of some slight attack of fever, on the cessation of which the morbid matter produces obstruction in the lymphatics and veins of the leg, occasioning distention and tumefaction of the limb, which is afterwards overspread with uneven lumps and deep fissures.

Treatment.—The usual remedy proposed is the knife; Mr Dalton (of Guiana, *Lancet*, 1846, p. 453) shows, that in the earlier stages the disease may at least be controlled if not checked.

Prof. Carnochan, of New-York, was the first to attempt to cure this disease by applying a ligature to the artery by which the diseased limb is mainly supplied with blood; and he has published a few cases in which he tried this practice with apparent success. Dr. Erichsen, of London, has since pursued the same treatment by tying the anterior tibial artery to cure the disease in the foot. Other cases have also been reported, all of which are said to have been successful. (See *Charleston Med. Journal*, March, 1860.) In Dr. Ogier's case, that of a negro, aged twenty-six, the disease had existed for five years, and the size of the leg and foot was such, that they had become a burden, and amputation was desired. The femoral artery was tied with a hempen ligature. The next day the reaction was high, the pulse rising to 180 per minute. This was controlled by *Veratrum-viride*. The leg and foot decreased on the second day to half the size preceding the operation. Three months later they had subsided to nearly the natural size; the patient walked about and felt no pain or uneasiness.

These cases, in which there is seen a gratifying result of surgical skill can not yet be accepted as satisfactory cures of disease. The original dyscrasia which existed in every case was still there; and a long course of constitutional treatment was needed to remove it. The only remedies which have power to remove elephantia are those which have been successfully used for lepra in its different forms. These are: *Arsenicum*, *Alumina*, *Carbo-animalis*, *Carbo-veg.*, *Caus.*, *Graph.*, *Natr.*, *Petroleum*, *Phos.*, *Sepia*, *Sil.*, *Sulphur*. *Arsenicum* has hitherto been most successful. (See *Lepra-Anæsthetica. Index.*)

GENUS X.—SCORBUTUS.—SCURVY.

The name scorbatus is from the German *scharbock*, or Dutch *scorbeck*, *sore mouth*.

CHARACTERISTICS.—Extreme debility; complexion pale and bloated;

spongy gums; livid spots on the skin; breath offensive; œdematos swellings of the legs; haemorrhages; foul ulcers; urine foetid; stools extremely offensive.

It is not yet a century since scurvy was regarded by all civilized nations as the most terrible scourge of the naval service. In those times when it was said of "Britannia" that

"Her march was on the mountain wave,
Her home was on the deep,"

how often did this disease strike down with blighting paralysis "the right arm of the nation's defence!" It was common, says Sir John Herschel, to see "death to the number of eight or ten a day in a moderate ship's company; bodies sewn up in hammocks and washing about the decks for want of strength and spirits on the part of the miserable survivors to cast them over board." So tremendous were the ravages of scurvy, that in the year 1726 Admiral Hosier sailed with seven ships of the line to the West Indies; and before he was able to complete his voyage he lost two entire crews, *burying his entire ships' companies twice over*, and then, in consequence, died himself of a broken heart.

Lord Anson, during his voyage round the world, lost more than four-fifths of his officers and men. Sir Richard Hawkins states, that within his own naval experience he had known more than ten thousand men perish from scurvy. In 1778, Dr. Johnson thus described a sea-life: "As to the sailor, when you look down from the quarter-deck to the space below, you see the utmost extremity of human misery,—such crowding, such filth, such stench!" "A ship is a prison with the chance of being drowned; it is worse—worse in every respect—worse air, worse food, worse company!"

Although this disease has been considered as almost annihilated from modern naval service, under exceptional circumstances it occasionally occurs again. During the war with Mexico, in 1846, several of the largest American ships were rendered entirely useless by the prevalence of scurvy among the officers and crew in an aggravated form. When the Raritan was ordered northward from Vera Cruz, she had on board more than two-hundred cases of the most malignant scurvy, and but few of the crew on duty were free from the disease. (*Dr. Folz's Report, 1848.*)

It has also appeared in some of the recent polar expeditions. Sir L. McClintock gives a melancholy narrative of the suffering of Lieut. Hobson, of the expedition in search of Sir John Franklin. Scurvy is still common in the merchant service, though the mortality is not now generally great. In 1859, of 172,506 seamen who sailed from England there were only thirty-seven deaths from scurvy.

GENERAL SYMPTOMS.—The appetite in cases of scurvy is usually good, alvine evacuations, healthy in general, though in some cases there is diarrhea. The urine has not been found to present any material departure from a state of health, in specific gravity, alkalinity, acidity, or freedom from albumen. The patient is liable to be sleepless at night, but has but little disturbance of intellect. In bad cases the pulse becomes very rapid, even as high as 130 or 140 per minute. There is some heat of skin, with febrile excitement and free perspiration at night—a constitutional condition approaching to that of hectic; and these symptoms usually indicate fibrinous effusion. In milder cases a dry and harsh skin has been given as a characteristic; emanation not generally great even in extreme cases.

DIAGNOSIS.—To the practiced eye, the external aspect frequently reveals at once the internal derangement. There is seen a “smooth or contracted brow, the passive or acting nostril, the parted or compressed lips, the dull or brilliant eye, the many shades of color, the expression derived from mental action, intermingled with that resulting from perverted organic function.” As in consumption, the brilliant eye, and pale or hectic flushed face alone might reveal the story of fatal disease; in Bright’s disease the puffed, waxy aspect of the victim, are strongly characteristic; in pneumonia the general capillary injection of the face is almost a sufficient diagnostic; amenorrhœa is seen in the chlorotic aspect; the sufferer from ague betrays the locality of his residence by the sallow anaemic complexion and wearied look. Scurvy has also its peculiar characteristics. The face of the patient reveals deficiency as well as depraved blood. It is sallow, dingy, earthy, and sometimes appears dirty; the conjunctiva is clear and transparent, the eye unusually bright, with dilated pupil, and bloodless lips. The countenance is generally passive and devoid of expression, though in severe cases, expressing a sense of dread. In some cases the gums are so much enlarged that there is a visible projection of one or both cheeks. The smell of the breath is highly offensive, peculiar to this disease, but nearly resembling the smell of animal substances in a state of putrefaction. The sloughing state of the gums when present scarcely aggravates the offensive smell. The margins of the gums are spongy, forming a hypertrophied mass, projecting between the teeth and much inclined to bleed; their color varies from deep-red to a livid blue or black, which contrasts strongly with the pale, anaemic appearance of the lips, tongue and inside of the cheeks; the teeth are often loosened by ulceration and even sloughing of the gums; the tongue usually presents a clean surface.

The patient is generally found lying on his back, his head rather depressed, as in that position the weakened heart can best do its work; the bed-clothes are sometimes elevated by the raised, contracted

knee. The surface of the body gives evidences of the damaged condition of blood in the exudation of its constituents—the blood discs, the fibrin, and more rarely the serum.—The colored corpuscles are extravasated in the form of small haemorrhagic, purpuric spots, from a small point to a large pea, of a vivid claret color, or larger bruise-like stains, commonly found on the lower extremities, of a size from that of a crown-piece to that of the length of the whole limb, and commencing around cicatrices of old wounds. Effusions of fibrin take place on different parts, especially of the lower extremities, the fibrin being poured out beneath the skin, or between the tendons and bones of the knee and ankle-joints, and fixes them as in a splint; when in the popliteal space the effusion produces the characteristic contraction of the knee-joint; beneath the skin or around the muscles, it makes the fleshy portion of the thigh or leg indurated, and it resists pressure as bone; on the surface of the tibia, or of other bones beneath the skin the effusion gives rise to node-like swellings, which are often tender and resemble those of syphilis, except in their not being accompanied with exacerbation of the pain at night. The skin is firmly adherent to the effused fibrin, cannot be pinched up, and is generally of a brownish hue; and every part in which the fibrin is effused is painful and tender. In some cases there occur passive haemorrhages from the nose, the mouth or intestines, seldom, if ever, from the lungs, stomach or bladder.

A tendency to fatal syncope is a very striking feature of scurvy. Scorbutic patients, not particularly reduced in strength, or emaciated, may, on a sudden over-exertion, as on rising to the erect position suddenly, sometimes fall down in a swoon from which they do not recover. In one instance, on board the Dreadnought, says Dr. Ward, a man in the prime of life, in fair condition of flesh, and apparent strength, "had been chatting in a loud and cheerful tone of voice, when on suddenly rising from bed to the night-stool, he fell down in a state of syncope; and before the medical attendant could reach him he was dead."

Dr. Trinks says: "The plastic exudations which give a board-like hardness, and the bleeding only from ulcers, are "to him" essential differential symptoms," by which he distinguishes scurvy from the muscular disease of Werlhof.

PATHOLOGY.—The blood of scorbutic patients is deficient in red corpuscles, and super-abounds in fibrin. The former has been found reduced to 48 parts in 1000, and the latter increased to three times its normal quantity. A microscopical examination shows some of the blood-corpuscles "shriveled or ellipsoidal in appearance." In a case already mentioned of sudden and fatal syncope, the heart was found very pale and flabby; lungs healthy; some effusion of serum into the

pleura; no traces of inflammation; abdominal viscera deficient in blood; corresponding to external bruises of the tibiae, and on the inner sides of the calves, there was extensive extravasation of blood into the subcutaneous cellular tissue. Other subjects exhibit extreme anaemia and prostration; projecting ulcerated gums; ecchymosis on the surface of dependent parts, &c. In an other case, Mr. Bask, of the Dreadnought, found the belly of the gastrocnemius muscle enveloped in a sheath of fibrin, a third of an inch thick, distinctly vascular, showing the texture to be a product of modified nutrition, becoming organized. Dr. Budd, examined a scrofulous node on the tibia; "On cutting down over the tibia, he found under the fascia a thin layer of coagulated blood, but no sensible extravasation of the size, and no injection of the clot. On cutting deeper, the periosteum was found separated from the bone for the length of six or seven inches by solid fibrinous effusion, or clot of chocolate-color, and a line or two in thickness. On the periosteal and osteal surfaces of this clot there was a slight extravasation of the size, but the clot itself was beautifully injected." The periosteum was itself thickened and infiltrated with blood, and when gently stripped from the clot, many vessels in the form of threads were seen to pass from one to the other; some of them filled with size; some vessels were also seen filled with size, coming from the clot and entering the bone. Dr. Budd found also, ecchymoses in the peritoneum, and in the mucous and muscular coats of the intestinal canal. Dissection reveals little after death that was not equally manifest during life.

PROGNOSIS.—Of the cases under good medical treatment not more than one in a hundred die.

TREATMENT.—This is generally confined to restoration to the food of the elements, the deficiency of which has caused the disease. Thus: some propose to cure it by giving the patient plenty of potatoes; and they are most beneficial when used *raw*.

Others give the salts of Potash.

Others Sulphur, Phosphorus, &c.

Others advise cheese, milk, or beef, because nitrogenous substances are wanting.

Some suppose that lemon-juice acts only by restoring the potash-salts needed in a perfect diet.

Citric-acid.—This is now well established as a remedy for scurvy. It seems also to be capable of causing the disease. Dr. Stevens, in his work on the blood (page 451,) says: In one instance the acid of lemon-juice produced scurvy. "The scurvy was decidedly brought on by the excessive use of Citric-acid which an American gentleman had recommended to be freely used as a preventative of yellow fever.

His own conviction as well as mine was that the scurvy was brought on by the Citric-acid."

Lemon-juice, as a remedy against scurvy was first noticed in the third Epistle of Rosseus, dated 1564. It is there stated that some Dutch sailors suffering from scurvy were returning to Spain in a ship in which were part of a cargo of lemons and oranges. They accidentally discovered that their use of these articles was the means by which they recovered their health. (*Encyc. Pract. Med.* Vol. III., p. 695.) It is mentioned as a remedy by Woodall, in 1636. (*Military and Domestic Medicine*, p. 165.) In 1600 Commodore Lancaster sailed from England in company with three other ships for the Cape of Good Hope. On reaching Saldana Bay, the Commodore's crew were in perfect health from the administration to each of his men of three table-spoonfuls of lemon-juice every morning; whereas the other ships were so sickly as to be unmanageable for want of hands, and the commander was obliged to send men on board to take in their sails and hoist out their boats. Different authors wrote on the efficacy of this article in preventing scurvy. But it was not till Sir Gilbert Blane, in his first voyage as fleet-physician, in 1780, presented a memorial to the Admiralty on the subject, that any systematic effort was made to introduce it into the nautical diet. At that time the number of cases of scurvy received into Haslar Hospital was 1457; in 1806 there was but one.

The dietetic treatment of scurvy rests upon the fact that protein is the basis of albumen, fibrin, casein, and these are the foundations or essential elements of all the tissues; and this starting point of the aforesaid animal principles must be obtained from similar elements in the vegetable kingdom. Liebig says: "It may be laid down as a law, founded on experience, that vegetables produce in their organism compounds of protein; and that out of these compounds of protein, the various tissues and parts of the animal body are developed by the vital force, with the aid of the oxygen of the atmosphere and of the elements of water."

Chemistry has demonstrated that the blood of animals is formed from substances which contain a large proportion of protein: and we find that men, when they are compelled to subsist for a long period almost exclusively upon animal food, become diseased from imperfect nutrition, the diseases taking always some of the forms of scurvy. Analysis of the blood of a patient on board the Dreadnought Hospital ship (off Greenwich,) showed:

Blood in Scurvy: Water 849.9; solid constituents 150.1; fibrin 6.5; albumen 84.0; blood-corpuscles 87.8; salts 9.7.

Healthy Blood: Water 788.8; solid constituents 211.2; fibrin 3.8; Albumen 67.2; blood-corpuscles 133.7; salts 6.8.

~~THE PULMONARY FUNCTION.~~

sources of lime-juice with a proper diet. Seasonally oranges may be eaten; tomatoes, vegetable soup, beef and mutton are forbidden by the soreness of the mucous membranes. In anaemia, a recumbent position must be adopted, as there is great risk of fatal syncope from sudden exertion. More work than it can accomplish. Proper diet is directly adequate to the cure of the worst forms of anaemia. Mental influences, such as the sense of security, are influences of bad diet that caused the disease, and the influence of the hospital on shore give important aid in convalescence.

Marasmus.—Dr. Huxham had a patient who had taken large quantities of Carbonate of Ammonia. This brought on a hectic fever, vast enlargement of the intestines, nose and gums, while every one of his muscles became so soft and flabby as those of a newborn infant. He wasted away rapidly, so as to break out all over the body in pustules; after being cured of the pernicious practice he lived only for a few months in the highest degree of marasmus.

Two cases reported two cases cured by Mercurius. Dr. Kafka (Berlin, Germany) says, he cures all his cases in the jail rapidly and safely with hot baths.

Chlorate of Lime.—Mr. Craner, of the Dreadnought Hospital,* cures sponginess of the gums more rapidly than any other. He uses it with lime-juice, but thinks the chlorate cures more rapidly without the acid-juice than with it. Curing the gums enables the patient to take food much better.

This cures all inflammations of the mouth and gums, whatever their cause may be, except those clearly syphilitic or cancerous. It cures true cancer of the mouth if taken early. In purpura hemorrhagica it hardens the gums and prevents their bleeding, has no influence on the disease. It is a speedy remedy in mercury poisoning.

Argyria Nervosa.—This form of purpura is usually seen during the exacerbation of scurvy, and is considered as belonging to that disease. Hence we introduce it in this place. It is characterized by brownish yellow and inter-colored blotches, varying in size from the point of a finger to the whole extent embraced from the knee to the foot, or involving the whole of the inside of the thigh." It consists of an ef-

* Med. Times and Gazette, 1857, p. 476.

fusion of decomposed blood in the cellular tissue, sometimes presenting the appearance of small petechia or flea bites, extending over most of the body, and attended by itching or pricking. In one case in the blockading fleet off Vera Cruz (1846,) the face of a petty officer presented the appearance of having been washed with diluted ink before other symptoms of illness appeared. The patient felt well, performed his duties all day aloft, and desired to return to them, but was not allowed. The following day he was confined to his cot; the purpura appeared on the extremities, the gums and mouth became more sore, and severe pain racked every joint and limb. See Vol. II. p. 199.

TREATMENT.—In addition to the dietetic treatment demanded by scorbustic influence when present, our reliance in every form of purpura must be placed on the following remedies: *Arsenicum*, *Ammonium-carb.*, *China*, *Hamamelis*, *Rhus-tox.*, *Gallic-acid*, *Sulphuric-acid*, *Secale-cor.*, *Carbo-veg.*, *Ferrum*, *Sulphur*, *Hepar-sulph.*, *Calcarea-carb.*, *Phosphorus*, *Phosphoric-acid*, *Mercurius-hyd.*, *Apis*, *Cantharis*.

When the malady has succeeded a severe attack of typhoid fever with great debility, diarrhoea, abdominal tenderness, thirst or adipsia, oedema of the extremities, nightly restlessness and jactitation, and great emaciation, *Arsenicum*, third dilution in water, will give speedy relief.

Rhus-tox., at the same dilution, may often be prescribed for the same group of symptoms after *Arsenicum*.

When the disease occurs as a sequence of small-pox, or measles, or scarlet-fever, or erysipelas, *Ammonium-carb.*, *China*, *Rhus-tox.*, *Hepar-sulph.*, and *Apis* are our best remedies. We usually employ the first and second attenuation of these drugs.

Phosphorus and *Phosphoric-acid* have been successful in cases which were apparently connected with sexual excesses, and seminal losses.

China and *Ferrum* will be required in chlorotic patients afflicted with the disease. We have observed the best results from palpable doses of these remedies; although cures have been effected with the higher potencies.

Mercurius-hyd., followed by *China*, have effected cures of cases occurring in persons suffering from chronic hepatic disorders. *Cantharis* is also an excellent remedy in cases of this description.

The higher potencies of *Calcarea-carb.* and *Sulphur* will be demanded in cases dependent on, or connected with a scrofulous dyscrasia.

GENUS XI.—EXANGIA.—ANEURISM.

Aneurism consists in a dilatation of the parietes of an artery. It generally embraces the entire circumference of the vessel, and may extend to a greater or less distance, even to the entire length of the aorta. When all the coats of the artery are dilated but not ruptured the case is one of "*true aneurism*." The vessel is frequently thinner than natural, the middle coat is deprived of its elasticity, and the vessel yields like a vein to the impetus of the blood. In other cases the coats of the dilated portion are hypertrophied.

Dilatation with rupture of one or more of the coats constitutes "*false aneurism*," as described by the old authors. The internal and middle coats are frequently ruptured; the blood comes in contact with the external or cellular sheath, dilating it to a pouch or sac. The tumor thus formed presses upon the surrounding cellular tissue, condensing it, and thus acquiring an additional envelop, often much thicker than the cellular sheath of vessel originally. "The interior of the sac contains fibrinous coagula arranged in concentric layers the more exterior of which frequently become so dense as to be distinguished with difficulty from the parietes of the sac." (*Copland*, Vol. I. p. 132.) The parts surrounding the tumor become attached to it through irritation at first, but are afterwards worn away by absorption promoted by the pulsations. In some cases the internal arterial tunics are perforated, which is followed by haemorrhage; this may immediately terminate in death, or may be checked by the obstructions furnished by the surrounding tissues; when it forms "*diffused aneurism*," as described by various authors.

DIAGNOSIS.—Aneurism, when deep-seated, presents no positive signs of its existence. Dr. Hope says he has met with many cases in which large aneurisms existed without awakening even a suspicion in the mind of the medical attendant. Sometimes it occasions no inconvenience, and is only revealed by the sudden death of the patient who had considered himself in perfect health. (*On Diseases of the Heart*.) Aneurism of the aorta may be suspected when there is a sense of oppression of the chest; dissimilarity of the pulse of the wrists; but these symptoms may also arise from other causes. Corvisart pointed out a "*purring tremor*" beneath the middle and upper part of the sternum, when the aneurism is in the descending aorta, and above the clavicles in aneurism of the arch; but this is often indistinct and may also arise from other causes. A wheezing or sibilous respiration and a whispering or croaking voice, with anxious and laborious breathing, are caused by aneurism of the aorta when the tumor presses on the large bronchi; pressure on the oesophagus obstructs deglutition,

renders it painful, and sometimes impossible. Erosion of the bodies of the vertebra by the pulsation of an aneurism produces a gnawing or boring pain in the spine; pressure on the brachial plexus of nerves causes aching of the left shoulder, extending to the neck and scapula, impaired power, and numbness of the arm; pulsation beneath the sternum, or above the clavicles, violent pulsations of the carotids; but none of these symptoms alone are conclusive signs of aneurism of the aorta. A perceptible tumor is visible about the fifth and sixth ribs of the right side when aneurism of the ascending aorta attains a certain size; its seat varies when the aorta is enlarged in other parts. The strong pulsations always present in the tumor indicate its nature; the indications furnished by all preceding symptoms are of doubtful value. In advanced stages of aneurism of the aorta there are coughs with mucous or bloody expectoration, dyspnoea, spasmodic attacks of suffocation, pain in the left shoulder, axilla, inner side of the arm, left side of the neck, pricking pains in the tumor, whizzing or rushing at the top of the sternum or under it; dragging downwards of the larynx, generally without fever. (*Copland, Dict. Pract. Med.* 1.)

The distinguishing symptoms of true aneurism in the various arteries are: extraordinary throbbing in a particular spot occupied by a small pulsating tumor, which disappears when compressed, but returns when the pressure is removed. Without change of color in the skin the tumor increases in size, and in the same ratio the pulsation diminishes. The coagulated blood lodged in the sac of the large aneurism prevents the obliteration of the tumor by pressure and lessens the communication into the artery beyond it. The pulse below the swelling becomes weak and small, and the limb becomes cold and oedematous.

There are three species of aneurism: 1. *True Aneurism* which is known by the presence of a pulsating tumor. 2. *False or Spurious Aneurism* in which there is always an aperture in the artery from which the blood gushes into the cellular substance. 3. *Varicose Aneurism*. This species of aneurism can only happen where a vein runs over an artery; as where the brachial artery is punctured in opening a vein. The blood from the artery rushes from the artery into the vein which becomes varicose.

CAUSES.—Aneurism of the aorta is more common in males than females. It is caused by inflammatory irritation of the coats of the vessel by which its elasticity and vital power of resistance are diminished; the habitual use of ardent spirits; augmented action of the heart produced by mental excitement and corporeal exertion; hypertrophy of the left ventricle consequent upon chronic inflammation of the vessel, and influenced by moral and physical causes; excessive mental

~~symptoms~~: violent physical exertions suddenly made; though a morbid state of the vessel has generally existed previously.

~~Prognosis~~.—Aneurisms sometimes terminate favorably by gradual contraction of the sac and absorption of the coagula; by compression exerted near and above the sac; by gangrene of the sac and obliteration of the artery; by the influence of inflammation in the vicinity, and the closure of the artery by the coagulable lymph thrown out; and by adhesive adhesion within the artery closing its calibre. When the artery involved is large, and beyond the reach of a surgical operation, the danger is always great; as the aneurism is liable to be ruptured by a trifling accident, and death usually results from haemorrhage in a few seconds. “The fatal event may be generally foreseen, as the tumor about to give way becomes particularly tense, elevated, thin, soft, and of a black purple color.” (Hooper, p. 67.)

~~Treatment~~.—Nature’s effort towards the cure of aneurism is directed to the throwing out of coagulable lymph which, with the fibrine of the blood, forms a layer, more or less organized on the inner surface of the artery. The researches of John Hunter show that this effort of nature can be assisted by measures which promote the *general health*, and improve the vital energies, but restrain or retard the action of the heart. “Great quietude of body and mind, a light digestible diet, the judicious avoidance of spirituous and malt liquors, are indispensable auxiliary measures.” “Change of air is beneficial, but all active exercise is dangerous: the digestive secreting and excreting functions should be attended to. The circulation may be partially controlled by small doses of *Digitalis*. The application of ice to the tumor has been advised by several European physicians. In one case recorded in the *Med. Repository*, 1817, ice was kept on the tumor night and day for several weeks, by means of an ox bladder.” “The skin over began to shrink, and by perseverance in the employment of the remedy the tumor wholly disappeared.” Though in this case the disease recovered, and in some other cases the ice treatment has produced effects, it has been successful in some cases, in which the *pressure* was probably more beneficial than the *coldness* of the ice.

A case of spontaneous cure of aneurism of the femoral artery by the pressure of the sides was reported in a letter by Dr. L. Spalding to Dr. S. L. Marshall.

In some cases pressure made upon the artery above the tumor has succeeded; but the only treatment relied upon by modern surgeons is the one recommended by John Hunter in 1785. A ligature is applied to the artery at some distance above the aneurismal tumor; the current of blood being thus interrupted, the tumor ceases to enlarge, and may even begin to be diminished by absorption. The artery being freed at a distance from the diseased point is likely to be in a sound

state, the adhesion of its sides is more certainly effected, the wound is more simple and easily healed, the circulation is carried on through anastomosing vessels, and the system is less disturbed than by an operation performed upon or near the tumor. (*Erichsen's Obs. on Aneurism*, p. 374.)

Compression has been successfully employed to remedy aneurism by diminishing the flow of blood through the artery without obstructing it. "A partial current through the sac enables the fibrine to be readily entangled in the parietes of the sac in the first instance, and this goes on increasing until it becomes filled: the collateral branches having been previously enlarged, the circulation is readily carried on through them." The compression is effected by two or three small "clamps" by which a graduated degree of pressure can be exerted; and when too much irritation is given in one place it is slackened while the necessary pressure is kept up by others. This treatment, proposed by Hutton in 1842, and since improved by others, has been successful in several cases. It is always safe and often applicable where the operation by ligature was contra-indicated. (*Bellingham*, pp. 14. Dublin, 1845.)

In 1859, Mr. Hart proposed to the Royal Med. and Chirurgical Society to retard the current of blood in the vessels of the limb by flexion of the leg upon the thigh. Cases illustrating the merit of this procedure have since been given where the formerly trusted methods had failed. Mr. Hart says: "The object in healing aneurism is not to cut off the supply of blood, or altogether at once arrest the circulation in it, but to cause such a retardation in it as will lead to the gradual deposit of fibrinous laminae in the interior, and so effect its gradual consolidation. The former method is uncertain and dangerous; the latter safe and permanent in its results." To attain this *partial* arrest of the circulation in the limb, a flannel bandage is rolled around the leg from the foot upwards, sloping below the tumor, so as not to compress it in any way. The leg is then bent on the thigh, retained in a fixed position, by means of three pieces of bandage attached to the ankle and along the leg. Confinement to bed is unnecessary, the patient can move about the room with a crutch. After a few hours the limb will require to be released from its restrained position; but, after an interval of a night, it is again bound up and retained so for several days. Absolute necessity for the retention of the flexed position will probably be gone in a week, but, as a measure of precaution, it is desirable that it be kept up for some days longer. To relieve the stiffness and aching of the knee-joint which results from its forced position, Mr. Hart uses a linament of chloroform and oil. Perhaps Arnica would be more efficacious than Chloroform. The flexion should be employed with care and graduated. Some distinguished

surgeons have recommended this mode of treating popliteal aneurism.

VARICOSE VEINS.—*Lower Extremity.*—1. Spontaneous superficial varicose in the lower extremity arise after deep-seated varicose of the corresponding part of the same limb.

2. Varicose of the sub-muscular veins may exist without manifesting the disease in the superficial ones; but the latter always ultimately appear.

3. Phlebectasis of the lower limbs does not begin in the subcutaneous vessels or in the saphena interna more than any other vein, but from deep-seated veins in general. They are first affected with dilatation and valvular insufficiency, and these lesions are thence propagated to the sub-aponeurotic vessels.

4. Dissection shows this state of facts and the distribution of the veins of the lower limbs reveals the cause of them.

5. These facts show the reason of frequent relapses after superficial varicose veins appear to have been cured.

TREATMENT.—*Hamamelis-virginica.*—Venous Congestions.—Since 1851, Dr. H. C. Preston (*N. Am. Jour. Homop.* Aug. 1857, p. 28), says he has prescribed it in about fifty cases of varicose veins of the lower extremity; and in no single instance has it failed to make a decided impression, and in a great majority of cases he has made a radical cure.

First bandage the limb tightly from the arch of the foot to a little above the knee. The best bandage is an elastic silk stocking manufactured for the purpose. Under this are compresses laid over the dilated veins and kept wet with Hamamelis tincture or Pond's Extract. The same remedy is given internally three times a day, the third dilution.

Some cases accompanied with indolent ulcers in the tibia have been under treatment for a year; but most cases have been cured in less than half the time.

Varicose of the Spermatic Vein.—*Circocele.*—This disease has been seldom cured, and only palliated by Sir Astley Cooper and others. A case is given by Dr. George Barrow, of Taunton, Mass. A merchant, of serofulous constitution, had swollen testicle of four or five times its natural size, hard and painful. He was not benefitted by Pulsatilla, Bell., Clematis, Rhus.-tox., continued for a week. He then took Pond's Extract of Hammamelis in drop doses every two hours. The scrotum was enveloped in a bandage kept wet with a dilution of one part of the tincture of Hamamelis to two parts of alcohol and water. In twenty-four hours he was free from pain, the swelling gradually disappeared, a silk suspensory bandage (without the collodion which he had before used), enabled him to return to business, and he was soon quite well.

Varicocele.—This is a similar affection of veins of the scrotum, and is a common accompaniment to circocoele. It may be cured by the same treatment.

TREATMENT.—*Secale*.—Characteristic symptoms. Hepatitis terminating in gangrene. Great feeling of coldness in the back and abdomen.—Putrid, foetid colliquative, diarrhoea. Sudden, striking change of features with deep, sunken eye-balls, surrounded with blue margins, constant nausea and vomiting after taking the least food, frequent diarrhoea, with watery, slimy evacuations, shrivelled skin which feels cool to the hand, inexpressible feeling of burning and anxiety in the pit of the stomach, hoarse, hollow voice, suppression of urine, cramp in the calves, paralysis of the upper extremities, scarcely perceptible pulse and unquenchable thirst. Violent drawing in the spermatic cord, so the testicles appeared to be drawn up to the inguinal ring.—Congestion of blood to the uterus. Excessive uterine contractions so that the uterus seemed to burst. Slow breathing, thirteen respirations in the minute. Spasm of the pleura with suffocative catarrh, speechlessness and subsultus tendinum. The limbs become pale, cold and shrivelled as if they had been lying in water a long time. Gangrene of the limbs, the limbs becoming suddenly cold and lead-colored and losing all sensibility. The skin is dry and brittle. The skin all over looks lead-colored, the parts becoming shrivelled and insensible and not emitting a drop of blood on being cut into. Burning of the skin as if a spark of fire has fallen on it. Large ecchymosis, blood-blister on the extremities becoming gangrenous; black, suppurating blisters.

GENUS XII.—GANGRENU.

1. *RAPHANIA GANGRENOSA*.—*Necrosis Ustilaginea*.—General malaise, tiredness, restless sleep with dreams, anguish; wandering pains in the back and lower limbs, spasmodic contractions of these parts; frequent attacks of violent pain and spasms, flushes of heat; pulse and appetite unchanged; abdomen distended and painful; urine clear and copious. Gradually the convulsed limb feels numb. It becomes exceedingly painful; pulse hurried, contracted; feeble; sweat on the face and head; hands and feet icy-cold, and can not be made warm. Erysipelas sometimes on the extremities.

At once the coldness increases, while the pains in the extremities cease. The extremity begins to show dry gangrene, in some humid; in the dry it is livid, the skin withered, wrinkled, turns yellow, then the limb becomes black, dry and hard as horn. If humid, the extremity swells; phlyctenæ filled with bloody serum form in the skin; the muscles become soft, and gangrenous parts spread a foetid odor of putrefaction; pulse more and more feeble; languor becomes extreme and there is a torpid fever, features become shrunken; fainting fits.

delirium, coma, exhaustive diarrhoea; and, when the symptoms of gangrene have reached a certain height, death takes place.

In a few cases the dead part separates by suppuration. In many cases the diseased limbs remain mutilated, atrophied, paralysed. One loses the toes, another a foot, a leg up to the knee or a whole limb; when suppuration is profuse he dies of hectic fever.

Solanum-nigrum.—Hahnemann (*Lesser Writings*, Vol. I, p. 162) recommended this as the most certain remedy. Dr. Gross reports several cases treated by it:

1. A farmer, afflicted with epileptic spasms and rage, was cured by *Solanum-nigrum*, after he was unconscious, and his limbs distorted by spasms.

2. His younger brother had painful creeping in the extremities with curvature of the hands; this was common in this district and considered as incurable. Gave him four pellets of this remedy of the 30°. In a few days it was reported that he was well. Two other children were affected in the same manner. They were cured; and also several other patients in that vicinity.

3. A boy, six years old; hands and feet bent inwards; was able to stand only a minute or two, though the involuntary contraction of the flexor muscles gave him the appearance as if he would jump, and caused risus sardonicus in the facial muscles. Gave him *Solanum-nigr.* 15°, two pellets.

Next day he was unable to stand; hands bent inwards more than before; third day the same; fourth day, all symptoms of spasm disappeared.

Raphania was epidemic in 1770, and 1771 in the district of Zelle, described by Taube in his history of it, 1783. It was then very often fatal; in this and in another epidemic there were convulsions and tonic spasms curving inward of the extremities; the wrist-joint entirely bent inwards; fingers drawn to the palms of the hands, and elbow to the chest; even tetanus. Epilepsy idiocy, rage, and risus sardonicus.

All of these symptoms were removed in a few days by *Solanum-nigrum*.

The gangrenous symptom is the one for which Ergot is the cause, and is also the probable remedy.

2. *Gangrene from Injury of the Nerves*.—Sir B. Brodie, has seen the heel begin to mortify twenty-four hours after a lesion of the spinal cord, and few surgeons have not seen ulcerations and even eschars appear upon the sacrum and elsewhere, in the first week after a fracture or luxation of the spine. *Entire section* of a nerve has no such effect. Mr. Brown-Sequard says, he has "seen hundreds of animals survive whole months, the section of the cord, and present in the parts

paralyzed no other lesion of nutrition than an atrophy, generally slow in showing itself.

*Gangrene after Injury.—Lachesis.**—1. A boy, aged nine or ten years. Severe injury from the explosion of a pistol held in the clenched hand, which was much torn to pieces; small finger with its metacarpal bone left hanging at the wrist by a bundle of flesh, skin and tendons; soft parts in palm of the hands loosened from the bones. Effort to save the finger. Dressed with Arnica and water. Inflammation followed, though union by the first intention took place in part of it and granulation progressed: "but at the junction of the finger with the hand, on the lower part of the palm, there was a spot nearly the size of a twenty-five cent piece, puffed up, of an ash-gray color, emitting an exceedingly offensive odor; gangrene had commenced. One dose of Lachesis 6° arrested the process in a few hours. The dead portion sloughed off shortly after, and the healing process went *uninterruptedly to a favorable termination*.

2. A young man, whose tibia and fibula were crushed under a large grindstone, ankle joint contused and lacerated. Dressed with Arnica and gave it internally. On the seventh day gangrene commenced with bluish purple vesicles for some distance round the wound, covering a dirty-ash-gray ground, and offensive odor. Amputation now the only resource of surgery. Lachesis 6° was tried in one dose. In six hours the nature of the case was entirely changed, in twenty-four hours the blisters had disappeared, swelling gone down; two days later the dead portions sloughed off; the wounds granulated favorably and the foot was saved.

In a third case gangrene supervened on a scalded limb. A boy, aged seventeen, fell with one leg into a kettle of boiling soap, destroying the skin and adipose covering of the limb to the body. The ninth day the dead portions so far as they were loose came away, exposing the fascia in places. Discharge of pus, profuse; muscles irritable and jerking spasmodically. On the twelfth day suspicious points on the exposed fascia emitted intolerable stench. Fascia puffed up, presenting purplish brown appearance and discharging bloody sanies. Thus gangrene had commenced. It was arrested by one dose of Lachesis 6°. Three days later the fascia sloughed away, leaving healthy ulcers which soon healed. Some other parts presented appearance of gangrene, and were corrected by Lachesis. The cure was complete, though with permanent flexion of the leg upon the thigh.

Gangrene of the Lungs.—Divisible into two forms, both very rare.
1. *Diffuse;* in which a considerable extent of the lung is affected,

as the whole or part of a lobe, the boundaries being but imperfectly defined.

2. *Circumscribed* gangrene is more limited in extent and distinctly separated from the remainder of the pulmonary structure. It varies from the size of a bean to that of a hen's egg, sometimes confined to one point, often found in several. It terminates as elsewhere in sloughing. The decomposed lung substance, reduced to a dark greenish fetid, diffuent mass, is evacuated generally through the bronchial tubes, but occasionally into the pleural cavity. The evacuation ended, a cavity remains. This cavity remains in some cases for a long time, even years in some cases; cicatrization takes place when the case does not terminate in death.

In the early period of the disease the pulmonary structure is solidified over the inflamed part when it occurs from pneumonitis; when the gangrene is preceded by pneumonitis exudation and oedema extend around the eschar. The cavity remaining after evacuation is distinguished by physical signs. Bronchitis occurs in the tubes near the gangrene, which, with the fluids in the tubes, are also recognized in the same manner. The seat of circumscribed gangrene often occurs in the inferior lobes near the surface. Diffuse gangrene generally attacks the upper lobes.

Diagnosis.—This is seldom made out before gangrenous matter appears in the expectoration, as the disease is developed in an insidious manner. It is first suspected from the intense effluvium, rendering the atmosphere insupportable. Diminished vesicular resonance on percussion, or dullness is more or less marked according to the size of the gangrenous portion of the lung, and of the solidification dependent on the exudation and oedema. When the lung is inflamed preceding the gangrene the dullness extends over the entire lobe. When the gangrene is circumscribed the percussion dullness is confined to a small spot, and may not be detected. Percussion gives no evidence of gangrene when it follows pneumonitis; dullness when it exists may not be referred to gangrene. Auscultation gives the respiratory and vocal signs of solidification, viz., elements of bronchial respiration and increased vocal resonance or bronchophony during the decomposing processes, feebleness or extinction of respiratory sound may be observed, also absence of reverberation and transmission of the voice. Bubbling rales, mucous or sub-crepitant, are heard in the vicinity of the affected part, owing to bronchitis, and later to liquid in the bronchial tubes derived from excavation. Cavernous signs succeed those of solidification after discharge. A remarkable factor is the most characteristic trait of the disease; it is called *gangrenous*.

Gangrene of the lungs is not a primary affection, but occurs in connection with fever, epilepsy, brain affections involving insanity, effects of

intemperance. The foetor of the breath, often unendurable when there is cough without expectoration is characteristic.

The matter expectorated is at first grayish white or greenish, resembling portions of gangrenous lung found after death. Later the matter is purulent, and less offensive in odor. The breath and expectoration furnish the diagnostics; the gangrenous foetor is not sufficient. If the expectoration suddenly assume a gangrenous foetor, at the same time becoming copious and presenting the appearances characteristic of decomposed pulmonary substance, the existence of gangrene is quite certain; especially if prior to the eruption of this peculiar matter the expectoration has been slight or altogether wanting. The case is clearer if there had been previously ascertained circumscribed solidification, and if cavernous signs afterwards appear in the same locality.

If peculiar foetor occur in the course of bronchitis it rarely ever becomes so intense as in gangrene; it has been developed less suddenly little or no gangrenous matter ever appears in the expectoration; no sign of solidification preceded, none of cavernous excavation follows it.

An abscess following pneumonitis may furnish purulent expectoration, sometimes foetid, but never so intensely so. The matter discharged is not the dark, sanguous, liquified gangrenous lung-substance above described.

Small portions of lung substance within a tuberculous cavity may communicate a gangrenous odor to the expectoration, but not to the true gangrenous extent. The previous history may distinguish the two cases.

Pneumo hydrothorax may be distinguished by the symptoms given under that head. Gangrene of the lungs occurs oftenest in children, next in adults, then in aged persons.

Summary of Physical Signs.—“Dullness on percussion, varying in degree and extent, unless the gangrenous portion be quite limited, and deeply-seated. Bronchial respiration, or suppression of respiratory sound within the area of dullness on percussion; increased vocal resonance or bronchophony and fremitus occasionally present; mucous or subcrepitant rales in the vicinity of the gangrenous portion; possibly, a true crepitant rale; subsequent to the occurrence of fetid expectoration, cavernous respiration, gurgling, and in some cases pectoriloquy.” *Remedies:* *Laches.*, *Phos.*, *Arsen.*

4. **GANGRENA SENILIS.**—*Spontaneous Gangrene.*—A form of gangrene which generally commences in the feet of aged persons, or at least those past the middle age of life, though younger persons have been attacked by it.

But it generally occurs in aged persons in whom the arteries have become ossified, more or less contracted, sometimes obliterated. The ossification generally extends well up the leg. In some cases the fe-

ral artery, instead of being ossified, has become converted into an impervious gristly cord; the change in all these cases seems to be the effect of a gradual degeneration of the tissue, without previous inflammation.

Premonitory Symptoms of Senile Gangrene.—There is for some months or years before gangrene is perceived, occasional pain of the toes and lower limbs, followed with numbness and some difficulty of keeping the feet warm. After the feet have been cold and are become warm again they become quite painful with a sense of weakness in the muscles. The patient can walk quite well for a short distance, but is soon exhausted; after one or two years he finds little blood in the feet, the heart is easily excited to unwonted action by running, walking up-stairs, lifting weights, by excitement of passion; the circulation is obstructed, the action of the heart is liable to stop, and syncope will follow. These premonitory symptoms may continue for years, and then the mortification will suddenly follow on some trifling inflammation. A *corn* may have been cut too deep till it bleeds, and inflammation and gangrene follow. Or the foot has been too cold, and then placed too near the fire to warm it; the toes inflame slightly and then mortify. Small blisters resembling those of severe erysipelas soon burst and expose *dead cutis vera*. The flesh though dead has not the usual black appearance of mortification; from not being supplied with blood, the dead portions often appear quite *white*, thus deceiving by this appearance the careless observer.

The gangrene may be confined to one toe or may extend to several, or to the foot. The pain sometimes slight, at other times excruciating. When mortification begins, a little line of inflammation appears at the margin of the gangrene which slowly creeps over the toes and up the foot, and the mortification follows it; the patient feeling all the time quite well in all other respects.

In the course of some months the disease begins to progress more rapidly; the inflammation followed by the gangrene extends farther up the toes and feet; a fresh attack of inflammation affects the general system; the morbid fluids existing in the diseased part begin to be absorbed; the pulse becomes feeble and rapid; the appetite fails; the skin is more hot, the patient sinks into a state of stupor, and, in a few days more he dies.

TREATMENT.—The first idea of the old surgeons was amputation; but this was long ago given up. The only efforts now relied upon are: 1, to check the inflammation by general and local measures. 2, to relieve the pain, support the strength till the dead portions can slough off, leaving the stump to heal by granulation.

Good diet, such as can be digested, must be furnished; digestion, assimilation and exertion must be kept in as healthy a condition as

possible. Stimulants, as ale, porter, beer, &c., must be used as far as they can be made agreeable. The patient must be confined to bed, warmly covered, first with some mild ointment, after which the best covering for diseased limbs is *carded wool*, as recommended by Mr. Vance, surgeon at the Greenwich Hospital. It was also tried by Sir R. Brodie with success in many cases. It should be applied in large quantities over the whole limb as high as the hip, sewing a silk hand kerchief loosely over it to keep it in place, and kept on several days. This application ensures the quiet of the limb, protects it from changes of temperature; and even the diseased arteries gradually assume a more healthy condition under its influence. It should be continued till full recovery; and then a soft woolen stocking and drawers should still be worn next the skin.

When the progress of mortification is arrested the line of demarcation is seen separating between the living and dead parts. The separation generally progresses till the flesh is entirely detached, and after a time even the bones become loose. The tendons and ligaments may need to be cut, but neither the flesh nor the bones should be severed by an operation. Cutting off a portion of the dead flesh does no good, and an incision into the live flesh is almost certain to be followed by a spread of the mortification.

To control the offensive odor of the dead flesh, employ a wash of chloride of lime, or chloride of zinc, though carefully guarding against wetting with it the living parts. A good disinfectant is a dry powder prepared by rubbing together 100 parts of plaster of Paris with 5 parts of coal tar. This may be applied to gangrenous surfaces, or to any other that is offensive, as it makes a good dressing spread on lint.

Tar water, which contains Kreosote, is also a good disinfectant.

When the gangrene spreads rapidly and the life of the patient is in danger, it is advised to destroy the vitality of the surface parts of the limb in advance of the inflammation and to consolidate the dead flesh of the sloughs while they are separating, so as to allow a distinct line of separation to be established between the dead and live flesh. Strong nitric-acid appears to answer this purpose better than any thing else, though the operation is very painful. First dip a piece of wool in the acid, wipe its surface, and apply the wool to all the surface for some distance beyond the gangrene. After one or two applications of strong acid, usually, the dead portion will begin to slough off; the acid should afterwards only be reapplied where the slough does not appear readily to separate from the living flesh.

When the spontaneous gangrene attacks the extremities of young persons, the arteries of the legs or feet having become plugged up with fibrinous exudations, the brain is quite liable to be simultaneously affected. The treatment consists in, horizontal position, quietude,

calming arterial excitement with Aconite, avoiding mental agitation and anxiety. Aconite alternated with Belladonna will control the febrile and cerebral excitement better than any thing else. Hitherto the reliance has generally been on Opiates to quiet the pain and irritation, stimulants, as Ammonia and lemon-juice, China, Lach., Arsen., &c. The application of a large quantity of wool around the limb with proper internal treatment, and good diet will sustain the vital powers till the dead parts have time to separate.

5 GANGRENE OF THE MOUTH. GANGRENOPSIS. GANGRENA ORIS.

The recent order of Surgeon-General Hammond, prohibiting the use of calomel in the United States Army, recalls to our recollection the observations of former years, in which this disease as a poisonous effect of mercury was more common than it appears to be now. It does not indeed occur as a *common* effect of mercury in good constitutions, even when that article is injudiciously used, but is almost always preceded by some other constitutional disease, as intermittent fever, scarlatina, or some epidemic. It is peculiarly liable to attack children over two years of age, or between the periods of the first and second dentitions, who are much reduced by protracted fevers, or mucous inflammations. It has long been known that children are with difficulty salivated, hence it has been common to prescribe calomel recklessly in trifling diseases; and very often, instead of an ordinary ptyalism the physician finds on his hands a case of gangrenous inflammation. Professor Dugas of Augusta, Ga., (in the Southern *Medical and Surg. Journal*, Oct. 1850,) says: "there are few communities in this section of the country in which there may not be found some living evidences of the havoc of mercury upon the face."

Symptoms.—The disease ordinarily appears in patients who have suffered from ague or some pernicious fever. When the original disease is subsiding a foul sloughing ulcer is observed on the gums near some decayed tooth, or in points which have shown effects of mercury. The local disease extends by a process of sloughing rather than by ulceration. The surface of the ulcer is jagged, covered with dark offensive cream-colored sloughs. In some children, previous to the commencement of this disease, there is general ill health for weeks; derangement of the digestive organs; alternate constipation, bilious diarrhoea; abdomen swollen and general emaciation. The patient is suspected to be suffering from the effects of worms, and one dose after another of calomel is given. The worms are not discovered, but after some days the mouth is observed to be sore. The epithelium is sound, except in one spot, perhaps adjoining a single tooth, which has been partially decayed before. At this point the gum is converted into a

epidemics are capable of so deranging the general health as to render the system peculiarly susceptible to the most deadly influence of Mercury. And there are some constitutions which naturally present this susceptibility to the influence of this poison, such persons being so sensible to its effect that they can not take the smallest particle of it without being salivated or otherwise poisoned. In them their peculiarity constitutes an *idiosyncracy* which has not originated in any of the above causes. But of all known agents Mercury itself is most destructive. The patient who has taken it oftenest for former diseases is most susceptible to its worst effects. He becomes more and more sensitive to its poisonous manifestations, until he can not take calomel in the most minute quantity without a sore mouth which keeps him in agony for weeks.—In some cases ptyalism continues for months, and its relapses last through life. When excited it does not supersede the fever for which it was given. The mercurial cachexia has been developed in him by former uses of the poison; and when he is attacked by almost *any* febrile disease, if we make a fair record of *all his symptoms* we shall find them to be precisely covered by the one hydra, Mercury. The homœopathist asks: "Is not Mercury then the proper remedy?" It is sufficient here to say, that when the disease has not been *caused* by Mercury, it, in *some* attenuation *is* a proper remedy. But when the disease has been caused by Mercury, the symptoms presented by the effects of this agent do not show a disease *SIMILAR* to the one from which the patient is suffering. We see only the identical enemy that we have been called upon to combat. We have not proposed to treat arsenical poisoning by administering more Arsenic, and we will not now depend on Beelzebub to cast out Beelzebub. But we have evidence enough to prove that Mercury, even in attenuations, can not be given in a true mercurial disease without greatly aggravating it. And when the condition exists which *simulates* the premonitory stage of mercurial disease, massive doses of Mercury can only be administered at the hazard of producing that fearful *medicinal aggravation* in which mercurial gangrene consists. Large doses of Mercury are bad enough anywhere, but here, where this powerful poison is the exact *similimum* of the disease, it always furnishes new evidence of the truth of Hahnemann's exposition of the law which should regulate the size of doses of a remedy, which *should* be curative when properly administered. He says: (*Organon*, § 275.) "If too strong a dose of a remedy that is entirely homœopathic be given it will infallibly injure the patient, though the medicinal substance be of ever so salutary a nature; the impression it makes is felt more sensibly, because in virtue of its homœopathic character, the remedy acts precisely on those parts of the organism which have already been most exposed to the attacks of the natural disease.

§ 276. Even a homœopathic medicine is, on this account, always injurious when given in too large a dose, and hurtful to the patient in proportion to the extent of the quantity administered. But the increase of the dose itself is also prejudicial in the same degree as the remedy is homœopathic and the potency higher,* and a strong dose of such medicinal substance (which bears no analogy whatever to the disease) of equal strength; for in that case, the *homœopathic aggravation* (see *Organon*, § 157 to 160)—that is to say, the artificial malady, which is very analogous to the natural one excited by the remedy in the most suffering parts of the organism—is carried to a height that is injurious; whereas, if it had been confined within proper limits, it would have effected a gentle, prompt, and certain cure. It is true the patient no longer suffers from the primitive malady which has been homœopathically destroyed, but he suffers so much more from the medicinal one which was much too powerful, and from unnecessary debility."

That Mercury is the common, if not the universal cause of gangrene of the mouth is generally admitted. We have now seen the reason that, while its effects are bad enough in almost any case, they are most terribly destructive in constitutions which are already in that condition of morbid sensibility to its powers which this poison is itself capable of producing. In malarious districts gangrenopsis is regarded as endemic: and in certain localities Mercury is thought more dangerous than elsewhere.

Professor Dugas says, he has "a vivid recollection of a family of five children, three of whom had, during the same autumn, been successively attacked with remittent fever, and they both died, with most awful sloughing of the cheeks and lips. They were all treated with Calomel." When the two remaining children took the same fever, another mode of treatment without Calomel was tried, and "they recovered without gangrenopsis."

That *all cases* of gangrenopsis are caused by Mercury is generally believed, though a few cases have occurred in which it was considered certain no Mercury had been given; and in these cases it is supposed that other debilitating causes of disease may produce a condition resembling the mercurial dyscrasia. That Hahnemann understood the subject is clear from the above quotations, as well as from other statements in various parts of his works. That he as well as others have often cured diseases which simulated mercurial poisoning, by giving this same article in attenuated doses, is well known.

* "The praise bestowed of late years, by some few homœopaths on the larger doses, depends on this, that they choose low dynamizations of the medicine to be administered, as I myself used to do twenty years ago, from not knowing any better, or that the medicine selected was not perfectly homœopathic."

TREATMENT.—This must be directed first, to correcting the general febrile and dyscrasial condition, and second, to the arrest of the local affection which results from the former. Generally the local affection can not be arrested till the fever is subdued. There have been a few cases which ceased spontaneously upon a gradual subsidence of the fever, with but little treatment of any kind. In one case in Indiana, a child, after the sphacelation had produced a large aperture in the cheek, seemed to be cured by the application of sweet cream to the raw surface from which the mortified part had separated. Healthy granulations immediately commenced, and the destroyed structure was restored, leaving very little deformity.

Aconite is one of the first remedies in the early stage, so far as it is indicated by the common symptoms for which Aconite is generally proper in all other febrile affections. We omit the symptoms here.

Gelsemium has been recommended in the place of Aconite. Our observations lead us to prefer Aconite.

Mercurius is a true specific for all the milder cases in which we are certain that not a particle of Mercury has been given to cause the disease. Where we can not ascertain whether it has been given or not, it is dangerous to hazard a trial of it in any of the *lower* triturations. How high would be safe; and whether the *highest* would have any power over a true mercurial gangrene of the mouth, we leave to be answered by those who have tried it.

Chlorate of Potash.—This, in the language of the old books, is a powerful "siliagogue," displaying a well-known elective action on the glands and mucous membrane of the mouth and pharynx. Being in this respect a similimum to Mercury, it is perhaps the most efficient agent known for counteracting its poisonous effects. In cases where Mercury has caused excessive salivation the chlorate has often been employed to arrest it. Even men who think the extreme effects of Mercury are necessary in the cure of many diseases, often employ the chlorate of potash to "check the formidable mercurial dispense, and permit the Mercury at the same time to be continued without danger." The practice is to use the chlorate in solution, washing the inflamed or ulcerated surface at short intervals, permitting small doses of it to pass into the stomach in a state of weak solution. At the Hôpital Sainte-Eugenie it has been used largely for ulcero-membranous stomatitis and is always successful.* Dr. Dethan proposed "to employ it in the form of pastilles, so that the patient may have at hand a remedy against the injurious effects of a mercurial course." Ricord and Fournier have found the remedy successful in this form. In gangrene of the mouth from Mercury and in some other diseases connected with malarial and

* L'Union Médicale, 1857.

epidemic fevers it is considered as the most efficacious remedy hitherto discovered. Mr. Fraser of England recommends it as an application to cancerous and other ill-conditioned ulcers. As a deodorizing agent it is one of the best known; and this fact indicates its appropriate application in other gangrenous conditions as well as gangrena oris. A weak solution dispersed by damp towels in different parts of the room is sufficient to remove the most offensive odor. For these various purposes we have often employed it. Permanate of Potash has similar powers.

Iodide of Potassium.—This article is also regarded as a specific for the poisonous effects of Mercury.

Symptoms.—In scrofulous constitutions subject to rheumatism, who have been injured by mercurial and other debilitating remedies: chilliness followed by general fever; dryness of the mouth followed by salivation; profuse serous discharge from the nose; inflammation of the mucous membrane of the nose and eyelids; eyelids oedematous; catarrhal inflammation of the schneiderian membrane extending to the frontal sinuses. Paleness of the face followed by redness and swelling of the face and tongue; lacerating pain in the jaw bones and teeth. Enlargement and inflammation of the parotid and submaxillary glands; ulceration and swelling of the gums. Ulceration of the tongue and mouth without salivation; otherwise ptyalism with great swelling of the tongue; excessive ulceration of the mucous membrane of the mouth; bloody saliva. Throat dry, hot, with burning, dull stinging pain; violent, continual and excessive thirst; flatulence in the stomach; nausea, vomiting; inflammation of the stomach; burning pain at the pit of the stomach. Pain in the region of the kidneys; urine diminished in quantity, high colored, mixed with mucus or blood; progressive and rapid emaciation and anaemia; palpitation of the heart.

Arsenicum.—This remedy has cured gangrenopsis in persons living in marshy, malarious districts. The symptoms are those of Arsenic generally, and the fever inclining to intermittent paroxysms. There are: blisters on the tongue; upper surface of the tongue white, membrane thickened; aphthæ; superficial ulcers on the edge of the tongue; disagreeable taste, astringent or bitter; frequent spitting; bloody saliva; heat and pain in the fauces; oesophagus, stomach and abdomen; throat and uvula swollen and red; occasional convulsive cramps in the throat; difficulty in speaking or swallowing; want of appetite; thirst not generally remarkable; sometimes thirst with anguish, perplexity; hopelessness; face often pale, cold, at other times red, puffy, oedematous; cachectic oedema of the legs; inflamed surface over the parotid glands; erysipelatous redness and swelling of the face; teeth aching, margin of gums on the teeth ulcerated; great emaciation, such as caused by Iodide of Potassium. Cases have been cured by *Arsenicum* in Fowler's solution, after the sloughing had destroyed

one-fourth of the lower lip; salivation profuse. The fever had been previously reduced by other means. Some local measures have generally been tried, and part of the good result has been attributed to them. One case was treated by local application of dilute muriatic acid, camphorated Alcohol fomentations. In the absence of fever Arsenic (in Fowler's solution), was given to the extent of producing distress of the stomach. The sloughing ceased, granulation commenced under cerate and lint dressings. Little deformity remained. The sloughing did not prove critical or abate the fever.

Ammonia-sesquicarbonas.—*Sub-carbonate of Ammonia.*—This remedy has been used with success, in small doses, or in the same manner as the Chlor-potassa. Dr. Wallace, of the Dublin Hospital, cured several severe cases with five grain doses. It is also known to cause a similar disease. Dr. Huxham had a patient who made a proving of Carbonate of Ammonia on himself. He accustomed himself to eat large quantities of it. "The consequence was that he brought on a hectic fever, vast haemorrhages from the intestines, nose, and gums, while every one of his teeth dropped out, and he could eat nothing solid. His flesh wasted, the muscles became soft and flabby, he broke out in pustules, and died in a few months."

Case by Dr. Douglas of Milwaukee, October 21.—A lady, slender, and of scrofulous diathesis, suffers from "great prostration; pains of head and back; skin hot and dry; pulse 110, small and weak; the gums are swollen, red, separated from the teeth, and pus oozing from them when pressed, the edges dark, and some of the points black and gangrenous; ulcerated points on the edges of the tongue; the left half of the roof of the mouth covered with confluent patches of superficial ulcerations, some points of which are gangrenous; intolerable odor from the mouth. For two days has had a chill in the morning, lasting from two to three hours. Ammonium-carbonicum, 3°, two grains in four oz. water; a teaspoonful every two hours.

"Oct. 22.—Mouth and gums greatly improved; dark color disappeared; minute sloughs have fallen off; pulse 84, full and stronger. Had the usual chill this morning for two hours, followed by fever. Continue the Ammonia-carb., alternated with Nux. On the first feeling of chill to-morrow, take Gelsemium." The next day the chill commenced, but it immediately ceased on taking the Gelsemium, and in 20 minutes perspiration followed without fever. The ulcers healed in two or three days more."—(*U. States Jour., Homeop.*, Vol. 1., Appen. p. 5.)

Tartar-emetic.—This is one of the most efficient remedies for the inflammation caused by Mercury, so long as *nothing but inflammation* is visible. When mortification commences we no longer rely upon it.

Symptoms.—Mouth dry, inflamed, red; tongue covered with raised papillæ, bright red, dry in the centre, sometimes moist, clear, gray or

coated white, covered with small pustules ; difficulty of protruding it ; embarrassment of speech, gums spongy as in scurvy ; the epithelial lining, buccal cavity, and lips and throat excoriated, swollen, red ; violent salivation. We have long used it in the third or fourth dilution in curing severe salivation, and always with good result. The centre of its sphere of action is in the stomach, and not the mouth. We omit further symptoms.

There are many other internal remedies suitable for this disease, but few practitioners have patience to wait on them to produce their proper effects. By their own anxiety, or the urgent solicitation of the friends, they are generally driven to try the power of local applications. There is, indeed, no good reason for rejecting topical measures, for they may be each, as Hahnemann says, "Homeopathic to the case in its own way." The remedies which might be expected to be successful are sufficiently numerous. We can only mention a few that *have succeeded*.

Sulphate of Copper.—Dr. Coates recommended a solution of this article, and also Tincture of Cinchona, as a lotion for the local treatment of this disease. Either of them will be successful in only the mild cases. The former, in a saturated solution, is often successful in those more severe. It may be tried when the previous health has not been bad ; when ash-colored ulcer is first observed, and before the fatal gangrene has clearly shown its character. The ulcer may be touched three or four times a day till improvement is manifest. In the whole course of the disease suitable internal remedies must be employed.

Hydropiper (Polygonum-hydropiper,) Water-pepper, Smartweed—An infusion or decoction of this common plant has long been used by farriers for the cure of salivation in horses. On trying it for Mercurial ptyalism, it has succeeded in all the cases in which we have known it tried. It has also cured the follicular stomatitis of nursing women.

Muriatic-acid.—Symptoms.—Dryness of the mouth, followed by free salivation ; the tongue becomes sore, with red, burning vesicles and blisters on the edges ; ulcers with black base and inverted edges ; palate inflamed ; fauces raw, burning, smarting ; toothache, with pain in the malar bones, ears, and temples ; burning pain, swelling, inflammation in the gums.

Scorbutic Gums.—Hahnemann, in his Chronic Diseases, gives many more symptoms ; and we have still more scattered through the books ; but among them all there has been no proving carried far enough to develop the peculiar and extreme effects which this corrosive acid is capable of producing ; and it is only of these extreme effects which specially concerns us in treating the present disease. In cases of accidental poisoning we see many more symptoms applicable here, but in-

stead of collecting them now, we will bring up some clinical facts which will sufficiently illustrate the operation of the remedy in curing gangrene of the mouth.

Muriatic-acid.—Van Swieten, the leading Professor of the Vienna Medical School in the middle of the last century, says he used “undiluted Muriatic-acid with great success,” as a local application to arrest gangrenous ulceration of the mouth. In this country it was introduced into practice by Dr. Jackson in 1826. In the Medical Recorder, Vol. XII., he says the result of its application in the cases in which he tried it:—“It presently stopped the gangrene; and soon after the eschar separated from the parts in which there was life. Nor have I ever known its application to fail me, except where the gums were entirely putrid, and the jaw-bone was affected; for then I could not prevent its being carious; but if the soft parts only in the inside of the mouth are gangrenous, it will certainly cure them.”

The most instructive reported case we have seen is given by Dr. James White in the Transactions of the “Fairfield Medical Association, Ohio:”—*

“A boy, aged eight years, had measles, then epidemic. Fever, efflorescence, heat of skin, slight chilliness, headache, pain in the chest, much increased by dry incessant cough; tongue coated and red at tip and edges; epigastrium very tender and tense. As a child, aged three or four years, had recently died in the vicinity from gangrene of the mouth, under all the horrible circumstances incident to that disease, no Calomel or Tartar-emetic were given in the treatment of this case. Some common measures, of which bleeding and mild purgatives were the most objectionable, were considered sufficient, and the boy was thought to be doing well when the dreaded gangrene appeared.

There was first seen a superficial slough on the gums covering two of the molar teeth on the right side, upper-jaw; gums on the opposite side sound. No foeter of breath or flow of saliva; there was little danger apprehended.

“In a few days the slough had increased; the periosteum of the teeth and alveolar processes were implicated, the breath was slightly foetid; some irritative fever. Common antiphlogistic treatment was tried a few days, without benefit.”

The Report proceeds:—

“March 1st.—The gums eaten out between two teeth. 2d.—One tooth loose, ulceration continues. 3d.—Spreading rapidly, and extends to the cheek. 4th.—A tooth extracted. A lotion of diluted Muriatic-acid and honey applied. 5th.—The application continued; the swelling of the cheek increased. 6th.—The application continued,

* Louisville Medical Journal, Vol. 2, p. 433.

flesh separated from the jaw-bone three-fourths of an inch by a half-inch. The lotion and charcoal applied. 7th.—The same treatment continued; another tooth extracted."

The case was now considered hopeless. No case after reaching this stage had in that region been known to recover. The right cheek was tense, swollen, pallid, and glossy; intumescence extending to the right eye, which was closed, and to the lips, drawing the right commissure to one side, from which the saliva copiously flowed. The whole expression frightfully distorted; the breath had the characteristic fetid odor. Caries had now seized upon the jaw, from which the teeth were extracted, and the cheek appeared internally hollowed out in space equal to half a dollar, and covered with a black, thick slough. Mortification appeared to extend from the jaw and cheek, high upwards towards the orbit, and was rapidly perforating the cheek. There was still fever, but the skin was soft and slightly moist; pulse of good strength, mind clear, apparently without pain. Appetite good: he takes chicken broth, gruel, panada. No tonics given; blisters also avoided, as in all cases in which they had been tried they had appeared to increase the general irritation, and give unnecessary pain.

"March 8.—*Undiluted Muriatic-acid* was then applied at 4 P.M., and repeated at 6, and then every hour till 3 A.M. The mortification was then found to be arrested, and reaction and sensibility of the parts acute. Application repeated twice on the 10th; sensibility still acute. From the 11th to the 19th Tincture of Myrrh and Alum were employed. The appearances favorable."

It is then proved that the undiluted Muriatic-acid, locally applied, can arrest the mortification of the soft parts, and even subdue the caries of the jaw.

Mode of applying the Acid.—Make a swab by wrapping a soft rag on the end of a stick. Charging this with the acid, carry it up to every part of the mortified surface. It gives no uneasiness so long as it touches only the gangrened parts, except by the inspiration of the fumes of the acid. As the parts in which vitality remains are reached, the pain begins to be felt, and soon would become intense if the washing with the acid were continued. At first it only dissolves away the mortified flesh as water dissolves the snow. When it comes to the living flesh in which the inflammation is at work, the new stimulant at once excites another though similar inflammation, and under this enlivening influence the old disease gives place to the new. The wound immediately puts on a healthy appearance; granulations and healthy pus are visible, the swelling subsides, and the general health in all respects immediately improves.

In the case above detailed, some exfoliated portions of the jaw-bone

were removed before the process of reparation could satisfactorily begin. The deformity remaining after recovery was slight.

Nitric-acid has also been employed with success in the same manner as Muriatic-acid. The symptoms are nearly the same in regard to gangrene of the mouth. They both act by exciting a new but *similar* inflammation to that already existing. This new inflammation, if carried far enough, would end in destructive mortification of all the parts to which it is applied. But, if we stop the application of them as soon as we have dissolved all the parts already dead, and when we have only touched and aroused with the new stimulant the part that is not yet dead, but which is rapidly progressing towards it, we only bring that portion of the structure sufficiently under the dominion of the new irritant to supersede the old one. It may be regarded as *crude homœopathy*, and exceptions may be taken to the strength of the acids employed. We do not say that dilutions of some other local stimulants would not answer in the worst cases: we know that the true homœopathist has many other resources that we have not yet mentioned; and with some of them he will generally succeed without resorting to the acids at all. But he will still claim that in the local application of Arnica, Nitrate of Silver, or even Cantharides, for the prompt cure of local inflammations *SIMILAR* to those they are severally capable of causing, he is still within the jurisdiction of the Hahnemannian *Law of Cure*, of which a full exposition is given elsewhere.

5. PHOSPHOR-NECROSIS.

The breathing of air containing the vapor of Phosphorus, causes various forms of disease, as bronchitis, and even phthisis pulmonalis, caries of the maxillary bones, abortion, &c. Dr. Dupagnier found the air containing the agent to consist chiefly of Hypo-phosphoric-acid, with small quantities of Phosphoretted Hydrogen, and some Phosphoric-acid, or Phosphorus in the form of vapor. The breath of the people who suffer from inhaling it becomes luminous in the dark.

DIAGNOSIS.—The first complaint is of a slight soreness or pain in one or more teeth in either jaw. This pain varies in intensity, and soon extends to the entire maxilla. The periosteum, and in a later period, the soft parts begin to swell and become painful on pressure; the gums and cheeks swell, become tender, and erysipelatous inflammation extends over the surface of half the affected jaw, progressing towards the ear and neck. With this local inflammatory condition the general system sympathizes; the latent causes of disease, which have hitherto remained dormant in the system are roused into activity, and scrofula, tuberculosis, or some other psoric or dyscrasie affection assumes its preponderating influence over the blighted and disintegrating frame.

CAUSES.—The disease originates only from Phosphorus or Phosphoric-acid gas taken into the system by inhalation. Though the operatives in the match factories are employed during the day in rooms ill-ventilated, and the noxious gas is brought into contact with the body generally, with the mucous membrane of the air passages as well as the whole cutaneous surface, it is only through the mucous membrane of the mouth that the poison obtains access to the bony structure which is to become the principal seat of its ravages. Microscopic researches have shown that the pathogenetic effects of Phosphorus begin in the periosteum which covers the alveolar processes, except in those very common cases in which the recent extraction of a tooth, or a large cavity in a decayed one, furnishes to the destructive agent a more direct admission to the osseous tissue. Dr. Geist says that in all cases of phosphor-necrosis, he has found one or two carious teeth, which furnished the first point of localization in the jaw. It is certain, however, that although there be no carious teeth, and none have been extracted, the poison, when habitually breathed in a condensed form, may be absorbed through the mucous membrane covering the alveolar processes in sufficient quantities to imitate the true periostosis, which never ceases till necrosis is established in the bone beneath. The degree of rapidity with which it progresses may be influenced by the age of the patient, and the degree of concentration of the poisonous vapor. From the moment that the periostosis begins, the nutrition of the bone is impaired, the periosteum is separated from the bone, and a morbid and offensive matter is formed between them.

PATHOLOGY.—In every form of caries, says Rokitansky, the sanious bone, examined in the recent state, presents various appearances, according with the progress which the disease has made. In superficial caries, the compact bone is rough and corroded under a covering of sanies; its medullary canals are unequally dilated; the tissues contained in them are partly reduced to a mere friable mass, or flabby, warty excrescences, which readily bleed, are developed from them, which shoot outward in considerable quantity over the rough surface of the bone. The bone always appears porous or spongy, according to the contents of the medullary canals; in the first case discolored—in the second case rough in various ways. In cases of caries of the spongy texture, when the formation of granulations is luxuriant, the bone assumes a dark livid redness; it becomes soft, and resembles a piece of flesh permeated by a fine, delicate, bony texture. It is said by Delpech, Bérard, Ponget and Sanson, that a peculiar fatty matter is produced; though according to Monret, the gelatin has not disappeared from the bone. The carious bone, in the macerated, dry state, appears rough as if corroded, and acquires a spongy, porous, worm-eaten appearance by reason of the unequally dilated medullary canals, which in several

places have formed into holes, and which perforate it. The cells of its spongy substance are dilated, and their parietes are attenuated and broken down like the grating of trellis-work.

The researches of Vauquelin show that, in caries, the organic constituents of the bone are increased, whilst the carbonate of lime is slightly diminished, and the phosphate of lime reduced in a much larger proportion. In an osteophyte-like crust deposited around a carious tibia, the phosphate of lime was still more diminished.

In France and Germany this disease has been common for several years, and it attracted the attention of the profession about 1847. In the United States it has increased rapidly since about the same period.

TREATMENT.—*Surgical.*—The following case sufficiently illustrates the treatment given to these cases in the hospitals.* A wax taper dipper had been working in this business seventeen years before disease and ulceration of his gums commenced. Thirteen months ago he had pain and swelling about the lower jaw, commencing in one of the right incisor teeth. An abscess formed and burst externally in the neighborhood of the tooth. Admitted to the Royal Free Hospital, Dec. 28, 1859. "His face generally was much swollen, exhibiting the peculiar pasty appearance witnessed in necrosis of the jaw arising from the fumes of Phosphorus. Several fistulae were noticed at the lower margin of the jaw, communicating with the dead bone, and giving passage to the matter. On opening the mouth the lower jaw was seen exposed, denuded of the periosteum, and quite black and clear; it was also slightly moveable.

Operation.—April 9th, 1859. Chloroform was administered to the extent of producing complete anaesthesia. The surgeon then proceeded to saw through the symphysis of the lower jaw, within the mouth, and by the aid of the forceps, the left half of the bone was drawn out entire, without its condyle, but with the ascending ramus. The same proceeding was then employed with the right half of the jaw, which came away with equal facility, but with the condyle, which appeared to be healthy. The hemorrhage was not great, and it spontaneously ceased. For three or four days after the operation there was some pain in the face, but this gradually diminished, and soon ceased entirely. The health now began to improve under a liberal diet, and appetite and strength returned. The investing periosteum, from which the old bone had been carefully separated, soon began to throw out fresh osseous material and a new lower jaw was in process of formation. The pasty appearance of the face and puffiness of the cheeks, however, still remained, and are the most prominent consequences of the affection. The patient left the hospital in a short time completely restored in health, and able to articulate his words with tolerable distinctness.

* London Lancet. Sept. 1859. p. 241.

On examining the bone, when cleaned and dried, it was found to be quite massive, and of nearly double the weight of the healthy bone. It was covered in some places with unhealthy lymph, which was undergoing osseous transformation.

The *reproduction of bone* by the natural action of the periosteum which has been left behind when the bone was removed was practically demonstrated many years ago by Professor Dudley of Transylvania University, Ky. He found that the periosteum, when carefully separated from the old bone beneath, and preserved in a healthy state, proceeded at once to the act of depositing the osseous material in regular layers, thus forming a new bone to take the place of the old one. This practice has now become common, and in a considerable degree successful. The periosteum throws out new layers of bone, which by investing the old bone, give strength if not symmetry to the mutilated member. In these cases the old bone is seen within the new formation. A jaw bone thus reconstructed by nature, in following out the intentions of art, is generally somewhat larger and more irregular in shape than that which has been removed.*

HOMOEOPATHIC TREATMENT.—The successful treatment by homœopathic remedies of some cases of caries of the maxillary bones arising from different causes has shown that our remedies when correctly employed have a power over this fearful disease to an extent not yet fully appreciated. We have collected in the United States Journal of Homœopathy some cases which illustrate the proper treatment. In the case of a scrofulous girl, aged nine years, in whom caries of the upper maxilla following typhoid fever was progressing, and there was pain in the bones and teeth, *Aurum-muriaticum* was prescribed Feb. 12. On the 18th the pain had subsided after the extraction of a large portion of the carious jaw bone. It was removed without pain, having spontaneously separated from the healthy portion of the bone. Muriatic-acid was afterwards used; then *Angustura* for deafness and rigidity of the masseter muscle. *Silicea 3°* was employed from March 11, to April 10, after which no medicine was needed.

In a case reported by Dr. Perkins (*American Homœopathic Review*, N. Y. Central Homœopathic Dispensary) a man had necrosis of the jaw for four months. Dr. Mott had advised excision of the jaw; the side of the face was much swollen, and a discharge continued from an open abscess communicating with the diseased bone. Dec. 11th he took *Phosphorus 30°* in solution. On the 15th he was much better; discharge and swelling less. Repeat *Phos. 30°*. He continued improving, took no medicine. Jan. 30, swelling almost gone; orifice healing up; general health excellent. Feb. 15, no signs of disease.

This subject is continued at length in U. States Journal of Hom., Vol. 2. p. 803 to 814. "Phosphor Necrosia."

A case by Dr. Lilenthal, Northern Homœopathic Dispensary, N. Y. A young man, aged 18. Chronic periostosis of the bones of the nose caused by working a year and a half in a match factory. He commenced March 15th to take in alternation Aurum and Calcarea-carb. March 22, he was better. A dilution of Nitric-acid was applied locally. The medicine was continued till April 25, when he was considered well. Several months afterwards he continued so. See Vol. I., p. 247.

OZENA.—This name is applied to any inflammatory ulceration of the Schneiderian membrane attended with a foetid discharge. The principal remedies are: *Aurum, Merc., Phos., Alum., Asar., Calc., Cic., Con., Lach., Puls., Sulph.* For syphilitic ozœna: *Merc.* If this has been too much used: *Aur., Hepar, Nitric-ac., Sulph., Thuja.*

Aurum.—Dr. Harper, in a recent work,* gives the following: A dwarf, aged sixteen years, with large head, joints tumid, long bones curved, whose family was scrofulous, the father having died of phthisis, had ozœna of four years' standing. The offensive matter runs over the upper lip, is sometimes greenish or yellow, and is so acrid that it excoriates the skin. The smell is so offensive that no body can go near her; and she uses twenty handkerchiefs per week. The mucous membrane of the nose is red and inflamed, and she perspires profusely every night from the middle of the body downwards. *Aurum*, twice a day, is prescribed. June 23, she improved considerably in three weeks. A month later the dose to be taken only once a day. August 9th, *Merc.-sol.* 3°, had been tried without improvement, *Aurum* 3° resumed. Up to Nov. 8, she gradually improved. There was still rather a large discharge of mucus from the nose, and the girl used four or five handkerchiefs in fourteen days, instead of fifty, as formerly. But there is now no purulent discharge, no smell perceptible, unless after taking cold. The general health is excellent. See Vol. I., p. 734.

GENUS XIII.—BLENNORRHœA.—GONORRHOEA.

INFECTIOUS URETHRITIS.—INFLAMMATION OF THE URETHRA.

The term *gonorrhœa*, derived from two Greek words, *γόνη*, semen, and *ρέω*, to flow, is very generally used by American and English physicians to designate this malady. Dr. Swediaur, perceiving the erroneous impression which this definition might convey, substituted another term no less etymologically inaccurate, *blennorrhœa*, or *blennorrhagia*, derived from two other Greek words, *βλέννα*, mucus, and *ρέω*, to flow. But modern researches having demonstrated that the involuntary discharge which is characteristic of the disease, does not consist of semen or mucus, but of a purulent and infectious matter, we think the errone-

* "Homœopathy tested by Facts," Edinburgh, 1858.

sus terms commonly employed to designate the complaint should be abolished. Many reasons may be adduced against naming the affection from the supposed character of the discharge; for notwithstanding, as a general rule it is decidedly *purulent*, cases occasionally occur where, from the intensity of the inflammation, there is no discharge at all, and constituting that form of the disease denominated by French writers "*blennorrhagie sèche*." The matter is likewise sometimes composed of a mixture of pus, mucus, semen and blood. For these reasons we prefer to make use of the more general term *urethritis*. Inflammation of the urethra may indeed arise from other causes than the application of the specific gonorrhœal infection, and present all of the symptoms peculiar to the venereal inflammation; but the malady is none the less *urethritis* on this account, although the secretion accompanying the inflammation is not infectious; so may an inflammation of the eye owe its origin to the application of venereal matter, external irritants, atmospheric changes, injuries, scrofula, and abuse of stimulants, and yet, notwithstanding these different causes, the disease is none the less *ophthalmia*. All secreting surfaces are liable to be irritated when operated on by certain unnatural stimuli. The mucous membrane of the throat, the bronchia, the lungs, the nostrils, the frontal sinuses, and the conjunctiva of the eye, are all subject to different grades and kinds of inflammation, and their secretions to become changed in quality and quantity, according to the morbid cause which has been in operation. The lining membrane of the urethra is also subject to the same laws; it may become inflamed and pour out a purulent discharge from the presence of calculi in the bladder, from gout and rheumatism, from acrid urine, from the absorption of certain diuretics, from ulcers, from mechanical injuries, and finally from the application of infectious matter from a venereal subject. In a very large majority of cases *urethritis* may arise from the cause last mentioned. This morbid virus induces a specific inflammation in the urethra of so troublesome and inveterate a character as often to baffle all the remedial measures of the most skillful and experienced men. The inflammation is supposed by some to be of the erysipelatous kind, and generally attacks the lacunæ of the urethra.

All who have had much experience in this disease, will agree with us that it is one of the most intractable with which we have to deal: "Mackintosh assures us that he has been more annoyed and disgusted in conducting the treatment of gonorrhœa than of any other affection."

Of the primary source of infectious urethritis we are at present ignorant, but the doctrine entertained by the ancients, and so strenuously advocated by John Hunter and his contemporaries, in regard to the identity of the gonorrhœal and syphilitic virus, is now universally abandoned. The disease under consideration is one of a *purely local* character, and if left to itself, under favorable circumstances, willulti-

mately terminate in spontaneous recovery. It is a matter of doubt whether ulcers of the urethra ever proceed from this inflammation, when entirely uncomplicated, but it is probable that the few cases which have been reported by Sir Astley Cooper and others, in which the malady was connected with ulcerations, were attributable to the application of the virus of both affections.

We have in several instances, inoculated individuals with matter of infectious urethritis, but have never been able to produce a chancre or any well-marked constitutional symptoms. We have, in one instance, also witnessed the introduction of the gonorrhœal virus into the blood, but without giving rise to any appreciable effects. While on the other hand, it is well-known, that if syphilitic virus be inoculated or introduced directly into the mass of the blood, the symptoms of syphilis speedily result. The application of gonorrhœal matter to the eye, gives rise to a very violent and dangerous purulent *ophthalmia*; while the application of syphilitic virus to this organ, causes an ulcer, generally circumscribed, and unaccompanied by violent or dangerous inflammation of the surrounding parts. The application of the former to the anus causes inflammation with augmented secretion, and change in its character from mucus to pus; the application of the syphilitic poison, causes chancre and its concomitants.

The susceptibility to the gonorrhœal virus varies greatly in different persons, according to the difference in the degree of natural sensitiveness in the mucous membrane lining the urethra. There is also an acquired insusceptibility to gonorrhœa. Repeated attacks render the membrane less susceptible; and the first attack is generally the most severe.

The blennorrhœa is often suspended during attacks of acute disease, but it invariably reappears again after the subsidence of the febrile symptoms.

From these facts it may be fairly inferred, that gonorrhœal matter contains a specific morbid principle, capable of producing a peculiar inflammation and discharge, when brought in contact with mucous surfaces. This inflammation and discharge presents a uniform appearance quite unlike what occurs in leucorrhœa, in several particulars. The matter of the former is infectious, while that of the latter is non-infectious; the inflammation of the former is of the *erysipelatous* kind, while the condition of the mucous membrane in the latter is more allied to *relaxation* and *debility* than to inflammation; the former can only arise from the contact of gonorrhœal matter with a mucous surface, while the latter never proceeds from any cause of this kind, but from constitutional weakness, confinements, venereal excesses, want of exercise, and other debilitating habits.

We may also infer, from what has been observed, that the syphilitic matter likewise contains a specific morbid virus, *sui generis*, and only

capable of exciting chancre, when applied to abraded or delicate surfaces.

It should always be remembered, that every morbid substance capable of impressing the organism, contains a certain *specific morbid principle*, which usually operates in a definite manner, causing a uniform train of symptoms, and requiring a certain *specific medicinal agent* to affect a prompt cure. These morbid principles only exist in infinitesimal quantities in their media, and on this account we are unable to detect or analyze them, but we ought none the less to acknowledge their presence, appreciate their influence, and endeavor, if possible, to discover their specific antidotes.

The whole course of a case of *gonorrhœa, inflammation of, and discharge from the urethra*, may be divided into four stages:

FIRST STAGE.—Lasting from one to two days.—*Symptoms*: a slight tickling or tingling, at the orifice of the urethra, and the flow of a small quantity of thin, transparent mucus, or milk-like discharge.

SECOND STAGE.—*Inflammatory*.—The meatus of the urethra becomes red and swollen; the discharge becomes copious, thick and milky, yellow, or greenish; the act of micturition is attended with pain and scalding, whilst erections and chordee torment the patient at night. During this stage the most distressing complications occur, such as irritation of the bladder, inflammation of the testicle, and of the prostate gland.

THIRD STAGE.—*Sub-acute Inflammation*.—The foregoing symptoms subside. There is slight irritation in urinating and the discharge of yellow matter continues. This stage is protracted and is liable to terminate in the

FOURTH STAGE.—*Gleet*.—There is usually little pain or irritation, but there is occasional emission of a transparent or milky secretion. The discharge at this stage is supposed to lose its infectious property; but the exact period at which this change in its character takes place can not be known.

Diagnosis.—The ordinary period at which infectious urethritis makes its appearance after infection is from two to four days. We have known it to commence in a few instances, in eight or ten hours after exposure, and we have likewise occasionally observed an interval of six weeks to elapse before its onset. Some constitutions possess the power of resisting the action of the poison to such a degree as to constitute an almost entire exemption from the disease; others again are so highly susceptible, either from natural organization, or from abuse of stimulants, that the slightest touch of the contaminating poison speedily communicates the inflammation.

The disease commences by a tingling or itching sensation at the orifice of the urethra, which is noticed especially when urinating. In a

short time, the lips of the urethra become red and swollen; the blood-vessels of the organ are distended; the inflammation increases and extends up the passage for an inch or two; there is a burning or scalding pain on passing water; an increased secretion takes place from the part affected, at first of a mucous character, but as the inflammation increases presenting a purulent appearance, of a yellow color, or if the disease is violent, green and sanguous. The urine, which often contains some thread-like substances, arising from the inflammatory action, flows from the urethra in a diminished, spiral or divided stream.

In a *first* attack the inflammation does not usually confine itself to the extremity of the urethra, but extends along the canal to the prostate gland, and even to the bladder itself. Not unfrequently it attacks the glans penis and the frenum, in which case it often occasions an effusion between the prepuce and the glans, and *phymosis*.

When the inflammation is intense, and extends up as far as the neck of the bladder, there is a frequent and urgent desire to urinate, the *ardor urinæ* becomes more extensive and painful, involuntary and painful erections occur, chiefly during the night, and sometimes cause distressing emissions of semen; sympathetic irritation is communicated to the perineum, occasioning painful sensations when evacuating the bowels, or the bladder; there is more or less inflammation and effusion of lymph into the corpora spongiosa, giving rise to those adhesions and painful contractions termed *chordæ*; the glands of the groin become irritated and enlarged, and there is a partial or even total suppression of the discharge, in which latter case the disease is termed *dry urethritis*, or "*blenorragie sèche*."

In old subjects who have often been infected the inflammation is quite prone to attack the prostate gland, and give rise to those unpleasant symptoms enumerated when alluding to affections of this structure.

If the disease be left to itself, and the patient is strictly prudent and temperate, a spontaneous recovery will eventually take place; but from improper medical treatment, undue exposure, or excesses of different kinds, the disease often terminates in gleet, strictures, abscesses, diseased prostate, irritable bladder, hernia humeralis, inflammation of the testicle and epididymis, or bubo.

The acute stage of urethritis, under ordinary circumstances, terminates in from one to three weeks, when, if suitable remedies have been employed, the discharge ceases, and the parts speedily recover their tone; but in the majority of instances, the *acute* stage runs into a *chronic* inflammation, when it receives the name of *gleet*.

FOURTH STAGE.—Gleet.—After the inflammatory symptoms of gonorrhœa have subsided, there is a continuance of a fluid discharge, varying in color and consistency, in some cases mucous in others puru-

lent. The quantity is generally small, often not more than a few drops in the course of twenty-four hours; whilst at times it ceases entirely for days together, returning without assignable cause or in consequence of some excitement in the way of diet or exercise. Though most commonly the result of an acute attack of gonorrhœa, mild cases of that disease, also, not unfrequently run on and assume the true character of gleet.

In this stage of disorder, the painful symptoms peculiar to the first period, *ardor-urinae*, frequent inclination to urinate, chordee, spasmodic pains in the region of the perineum, and the heat and swelling of the penis subside, and we observe little else than an increase and alteration in the character of a secretion from the urethra. This discharge, which during the acute symptoms was purulent, and of a yellow or greenish color, now presents a light mucous appearance, sometimes transparent and ropy. The character of this discharge, however, is often temporarily changed again to a purulent matter of a yellow or even green color, sometimes sanguous, from over-exercise, excesses in drinking or eating, sexual intercourse, and exposure to protracted heat or cold. The discharge of a simple gleet usually proceeds from the lacunæ of the urethra. Some writers have promulgated the dangerous doctrine that the matter of gleet is not infectious; but this is an error, for we have known many well authenticated instances where virulent urethritis has arisen from the application of gleety matter.

When a gleet has been permitted to continue for a long time, and particularly if the case has been injudiciously treated by inordinate doses of *Copaibæ*, *Cubebs*, *Turpentine*, and the endless train of irritating injections, there often supervenes a

STRICTURE OF THE URETHRA.—This consists in a chronic thickening of the lining membrane of the urethra, amounting in some cases to stricture; in others the mere irregularity of the canal, is a common source of gleet. When, after a fair trial of other means the discharge continues, the passage should be explored with a bougie. Whether the stricture be only partially or perfectly formed it may soon be dispersed by the use of the bougie introduced every three or four days, and permitted to remain a quarter of an hour or more each time. The slight irritation thus induced is sufficient to cure. Too frequent introduction of the bougie excites too much inflammation, which is a medicinal *aggravation*.

A stricture may occur during the height of acute urethritis, from tumefaction of the mucous membrane of the canal, or from the irritation caused by improper or unskillful introduction of bougies, and by strong injections. The obstruction in some cases of this description is so complete, that very painful retentions of urine, with the accompanying symptoms, supervene, requiring the most prompt remedial measures in order to ward off the necessity of puncturing the bladder.

This variety of stricture may be removed in a short time by proper medicines, without the aid of a surgeon.

There is a second variety of stricture not necessarily connected with infectious urethritis, termed *spasmodic stricture*. The disease consists in a sudden spasmodic contraction of some portion of the urinary canal, which impedes the flow, and sometimes causes a partial retention. These spasmodic contractions may arise from mechanical injuries, diseased prostate, or stimulating diuretics, but they are for the most part connected with permanent stricture.

The third variety of stricture, which is by far the most common and serious, is termed the *permanent stricture*. Its approach is so gradual and imperceptible, that individuals rarely suspect any thing of the kind until it has made considerable progress. The disease arises from a gradual thickening of the mucous membrane of the urethra, from bodily-treated or long-continued inflammation.

The first symptoms observable in this stricture are: a sensation after urinating as if a few drops remained behind, stream diminished in size, and issuing from the urethra in a spiral form or split in several parts: straining to pass water more rapidly through the obstructed canal: aggravation of all the symptoms on wetting the feet, taking cold, over-exercise, fatigue and venereal excesses. In this stricture there is always more or less discharge of a ropy kind of mucus, which is often temporarily changed by excesses, into a purulent or bloody matter. This complaint is quite apt to induce inguinal hernia, from the straining efforts employed in urinating. It is probable that two-thirds of the cases treated as simple gleets and which so frequently baffle the physician are in reality dependent, solely on this kind of stricture.

In bad cases of permanent stricture, the urine is passed drop by drop, the distention and pain in the region of the bladder become very severe, much constitutional irritation occurs, and the patient is unable to rest day or night. Whenever this state of things obtains, immediate recourse should be had to bougies.

The removal of a permanent stricture can only be accomplished by means of the knife, or the application of caustic, or by gradual dilation by means of bougies. The cure by the latter means is, at the present time almost universally recommended. We have found a bougie made of the dry bark of the *ulmus fulva* or *slippery elm* to possess many advantages. By holding it in warm water the surface becomes mucilaginous; it then passes with great facility; and by permitting it to remain but a few minutes, it expands and dilates the stricture.

Almost all strictures are located far up the canal of the urethra, behind its bulb, but they may occur near the extremity of the penis or three, four, or five inches above this point.

An occasional consequence of stricture is disease of the prostate gland.

GONORRHOEA.

DISEASED PROSTATE

May also be ranked amongst the occasional consequences of repeated attacks of urethritis. During the continuance of the latter affection, in an acute and obstinate case, not only the urethra, but the prostate, the bladder, and the testicles receive an unusual supply of blood, in consequence of which they become irritated, and often enlarged, from depositions of coagulable lymph. This condition of things may exist without attracting much attention until the individual is advanced in years, when a scirrrous degeneration, or an abscess, is exceedingly apt to result. Either lobe of the prostate may become enlarged separately, or the whole three may be involved; but the most troublesome symptoms arise from an enlargement of the middle lobe, on account of its proximity to the orifice of the urinary canal. This painful and troublesome affection usually occurs in acute and obstinate gonorrhœas in scrofulous and irritable constitutions. The inflammation beginning at the orifice of the urethra extends upwards towards the bladder, involving the prostate in its course.

Symptoms.—Heavy, pressive aching in the perineum extending often to the rectum, causing a degree of tenesmus. The patient can neither sit nor bear pressure over the prostate, which swells and may be felt internally. There is irritation of the bladder; partial or complete obstruction of the flow of urine, which is often mixed with blood. The gonorrhœal discharge generally diminished or suppressed.

Sir Astley Cooper was of opinion, that enlargement of this gland is attributable to advanced age, rather than disease; but from the fact, that persons who have been afflicted in this manner have almost invariably been subject to repeated venereal attacks in early life, we may fairly infer, that a predisposition is always established in the structure, which renders it liable to take on diseased action when the powers of the organism have become impaired by age.

Enlargement of the lateral lobes of the prostate may be readily detected by introducing the finger into the rectum. The middle lobe may always be felt by the catheter when much enlarged, and it will generally be found exceedingly difficult to pass it by the gland into the bladder. By directing the point of the instrument, (which should be of the medium size), slightly upwards, and depressing the handle at the proper time, the object may usually be accomplished. But of all others, these cases require great delicacy of touch and practical tact to enable the operator to succeed facilely, and without doing injury to the irritated parts.

Diseases of the prostate are quite liable to become aggravated by over-exertion, riding, acrid urine, exposure to wet and cold, and stimulating drinks.

A careful attention to the history of each individual case, will aid us materially in forming a correct diagnosis.

PATHOLOGY.—In some cases the discharge issues from the lacuna magna, situated a short distance up the urethra. In that case a drop of the discharge may at most times be pressed out of the urethra with little effort. In other cases it proceeds from chronic relaxation of the membrane higher up the passage towards the bladder, or from the prostate gland, or more commonly still from a stricture. The exploration with a bougie reveals the existence of stricture; if none be found on trying it, and if ordinary injections fail to arrest the discharge, we may infer that the disease has its origin in some irritation or relaxation of the deeper-seated portions of the urethra.

PROGNOSIS.—The duration of an attack of gonorrhœa cannot be estimated with any degree of accuracy. One case will get well in a few days, whilst another assumes the most aggravated character, developing many complications, and hangs about for months. A scrofulous constitution, and an irritable nervous temperament are more likely to belong to those cases which take on the more serious aspects; in some of these treatment has to be protracted “to an almost indefinite period.”

TREATMENT.—Infectious urethritis is at the present time almost universally regarded as a local disease,—confined in its first stages to a small portion of the mucous membrane of the urethra. It is true that the inflammation often extends up the urinary canal to the prostate gland, and to the bladder; but it is highly probable that these secondary symptoms are owing to bad treatment, or imprudence on the part of patients, rather than to the natural and legitimate tendency of the malady. We adopt this opinion from having often observed spontaneous cures occur in six or eight weeks without medicine of any kind, and without any structure but the urethra becoming affected,—the patients having simply placed themselves under a rigid dietetic regimen.

For therapeutical purposes the course of the disease may be subdivided as follows: First. The *preventive period*, or that which intervenes between exposure and the first symptoms of the malady. The average duration of this period is about three days.

Second. The *forming stage*, or the period which elapses from the commencement of the prickling, tingling or itching sensation, with slight redness and swelling of the orifice of the urethra, and a slight oozing of mucous or limpid matter, up to the period when the inflammation has extended to the *fossa navicularis*, and become strongly pronounced, with a purulent discharge of a yellow or greenish color. This stage usually lasts from twelve to forty-eight hours.

Third. The *acute or inflammatory stage*, including the period which

commences at the termination of the last stage, and the subsidence of the *ardor urinæ*, the acute inflammation of the urethra, the swelling and tenderness of the penis, and the change of the yellow or greenish secretion, to one of a light, transparent and ropy, or a muco-purulent character. The natural duration of this stage, when proper restrictions are used as to diet, stimulants, and exercise, is from one to two weeks.

Fourth. The *chronic stage*, or that form of the malady termed *gleet*.

Now as our object, in accordance with the homœopathic doctrine of cure, is to produce in the tissue morbidly affected, a new and healthy medicinal action, which shall supersede the morbid inflammation, we apply our remedies *directly* to the diseased part, instead of bringing them in contact with it through the stomach, blood, and kidneys. The malady is not constitutional,—there is no other structure of the economy affected, or upon which we wish to act,—but our sole object is to prevent or to remove a simple *local* inflammation.

Our remedies then, during the first or *preventive period*, are the occasional injections into the urethra, of nitrate of silver (in the proportion of two or three grains to the ounce of distilled,) or of sulphate of zinc, in the proportion of four grains to the ounce of water. The occasional use of these injections after an exposure, with strict temperance and quiet, will usually prevent the occurrence of the disease. These remedies neutralize the absorbed virus before it has time to impair the function of the membrane with which it is in contact, and thus its power to do injury is summarily destroyed.

Diet.—During the acute stage the diet should be light and unstimulating; all stimulating drinks and active exercise should be avoided.

There is also a certain and speedy cure for the *second or forming stage*. The symptoms of this stage, as we have seen, are a tingling or itching at the end of the urethra, with a slight redness, and a slightly increased secretion of mucus. The remedy for this stage is a *saturated solution of nitrate of silver*, a small quantity of which is to be applied, by means of a small syringe, or by a small bit of sponge to the urethra for an inch in extent. The solution should be delicately and rapidly applied, and a quantity used just sufficient to give the portion of the membrane touched, a white cast. This causes a smart but healthy medicinal inflammation which subsides in about twenty-four hours, leaving the structure cured. This course is strictly homœopathic, for we impress directly the tissue affected, produce a powerful medicinal *aggravation* of the symptoms, and overwhelm the disease by substituting temporarily, another inflammatory action. No unpleasant consequences ever result from the use of this remedy, when it is employed before the commencement of the *third or acute stage*. Our experience with this solution has been extensive, and we therefore

confidently recommend it as a perfectly safe and sure remedy in this stage of the complaint.

During the *third or acute stage*, it is a question whether any remedies, either general or topical, can be employed with any material advantage, with the exception of the internal use of *Aconite*, which may be given to shorten the inflammatory stage. This medicine is particularly applicable when febrile symptoms are present. Throughout this stage, the patient should be restricted to the most rigid vegetable or farinaceous diet, to cold water, and prohibited from taking much exercise. Ablutions with cold water, should be often employed, in order to keep the parts as free as possible from the irritating discharge. After the urgent symptoms have subsided under the use of *Aconite* and the other means we have just pointed out, and the *fourth or chronic stage* has commenced, we may resort to injections composed of one grain of *Sulphate of Zinc* to 3 vii. of water. These injections, in order to be efficient, must be repeated every half hour during the day, until the discharge ceases. It will be of no service to use this solution three or four times in the day, for the chief object is to wash out the urethra as fast as the matter forms, and thus prevent the constant reabsorption which would otherwise take place.

The principal reason why urethritis is so difficult to cure, when once fully established, is, that the matter itself being infectious, and liable to be constantly reabsorbed, thus operates as a continual exciting cause. If at any given instant, the whole urethra could be restored to perfect health, a single drop of the morbid secretion which it had been pouring out, applied to the part, would be sufficient to re-excite the disease in all its violence. It is evident, then, that the discharge must be arrested abruptly by the remedy employed, or we must use our injections sufficiently often to dilute and remove the virus as fast as formed, and at the same time to change the morbid action of the membrane to a healthy medicinal action.

In regard to the plan of making an application to the urethra, of a medicine so powerful as to arrest the discharge suddenly, like the solution mentioned under our *second head*, it is attended in this stage of the affection with many dangers. The canal of the urethra is generally affected so high up as to render the certain application of this or any other sufficiently powerful solution entirely impracticable.

But the other method to which we have alluded is one of entire feasibility and safety, and is for the most part attended with success, when the discharge is entirely unconnected with a stricture. It is proper to observe that in all cases the patient should urinate previous to the use of the injections. Another injection which we have sometimes used with marked success in this stage, is a mixture of *Calomel*

The selection will generally be made by constitutional rather than by local indications. There is generally a depressed state of general health, for which *Nux-vomica* and *Sulphur* are important remedies.

Cinnabaris is one of the best forms of mercury.

Pulsatilla in chronic affections of the urinary organs, in phlegmatic and scrofulous constitutions.

Aconite.—In the early stages of the disease, when the inflammatory symptoms are rapidly developed and run high, when the scalding is severe, the discharge copious; erections at night frequent and painful, and general symptoms febrile; *Aconite* in drop doses, of second or third dilution, perhaps in alternation with another appropriate remedy.

Mercurius-corrosivus.—In the early stage may be alternated with *Aconite*; in two or three drop doses of second or third dilution (decimal.) These two remedies seldom fail to subdue the more violent symptoms. The Corrosive is apparently the most efficacious of the mercurials. The Merc.-sol. seems less efficient.

Cantharis.—In acute cases in which the membrane of a large portion of the urinary tract is implicated; the irritation extends from the orifice of the urethra to the bladder; scalding and burning along the passage; frequent and painful urging to urinate. It may be alternated with *Aconite*. A drop dose of the third dilution every six hours is often effectual.

Cannabis-sativa.—When the more active inflammatory symptoms have been mitigated by *Aconite*, *Merc.-corros.*, or *Cantharis*, and there still exist considerable irritation and burning in micturition, swelling and redness of the orifice of the urethra, copious white or yellow discharge. It seems to hold about the same place in homœopathy that *Copaiba* does in the old school; but it is free from any of the inconveniences of that remedy. Dr. Yeldham says, "to do any good it must be given in palpable doses. I am in the habit of prescribing from five to ten, or even fifteen drops of the mother tincture three or four times a day. In my own practice the dilutions have proved nearly or quite inert."

Balsam of Copaiba.—All the standard authors testify to the merits of this remedy in blennorrhagia as well as in vesical catarrh, nephritis, ulceration of the kidneys, bladder and prostate, orchitis, cephalalgia, &c. These same men say, the remedy must be "used with prudence," for it is capable of causing swelling of the testicle, obstinate cephalalgia and weight of the head. It has also caused as well as cured hæmorrhoids; sharp pain in the urethra, inflammation in all the urinary passages, retention of urine, phlegmasia of the bladder.

Copaiba is a powerful homœopathic remedy in gonorrhœa, but it acts chiefly as a *local agent*; and thus, like *Cannabis*, it requires to be given in palpable doses, which its objectionable taste and smell, and

its effects on the stomach render difficult to the patient. The best mode of giving it is in capsules, which conceal its taste. Dr. Yeldham says, he failed entirely with it in attenuations. That its action is only local was considered to be proved by the experiment of Ricord. This celebrated author says: "In one case there was urethral fistula at two and a half inches from the meatus," blennorrhagia occurred in the vesical portion of the urethra, but it spread itself forwards to the balanic region. The use of Copaiba caused the disappearance of the discharge in that portion of the urethra situated behind the fistula, viz., that which was under the influence of the urine. But the discharge from the portion anterior to the fistula, viz., that portion of the canal which did not come into contact with the urine persisted. Injections caused its disappearance." In another case of fistula of the urethra the result of Copaiba was the same. When taken in palpable doses and the urine was allowed to escape through the fistula at the middle of the urethra, the Copaiba coming in contact locally with the inflamed surface cured it; while the part of the urethra in front of the fistula, through which the urine with the Copaiba did not pass continued diseased as before. Afterwards when the urine was made to pass all through the canal the Copaiba diluted in it cured that portion also. These experiments show that Copaiba is a homœopathic specific for urethritis when applied directly to the inflamed surface. Whether it has any dynamic power over the same disease in attenuations remains to be seen.

Cubeba.—Dr. L. De Parseval, (*Bulletin de la Société Médicale*, 1860), gives the following symptoms: Specific action on the genito-urinary apparatus producing inflammation or phlegosis of the urethra, bladder, testicles; ardent fever; ardor urinæ, redness of the face; retention of urine, cutaneous eruptions; allopathic authors also say, the Cubebas produced all of these symptoms and "despite this the cure of the gonorrhœa has taken place." M.M. Troussseau and Pidoux say, Cubebas have become popular in the treatment of this disease, "which rationally, this agent must greatly exaggerate." The facts of experience show, "that Cubeba acts more beneficially the sooner its employment is instituted after the beginning of the blennorrhagia."

Thunja.—Corresponds generally with Cannabis, and may be employed in the same class of cases and in the same stages; particularly indicated when there are warty growths on the corona glandis, prepuce or about the anus. The above are generally the most useful remedies.

Capsicum.—When the burning along the urethral canal is intense.

Nux-vomica,—when the digestive functions are disturbed, and when the irritation extends to the rectum, causing frequent and distressing urgings to stool, with protruding haemorrhoids.

Turpentine.—It excites inflammation of the urinary organs. M.M.

Merat and Leus say, the terebinthines irritate the mucous membranes and the organs covered by them rendering their functions painful. Continued for some time they produce painful and bloody micturition. Dr. Despres who took a large quantity in the course of fifteen days died from inflammation of the urinary organs. Turpentine produces spasm of the bladder, strangury, bloody urine, violent pain in the region of this organ. It also causes pain and heat in the lumbar and hypogastric regions, especially the kidneys, (*Trousseau and Pidoux*), acute cystitis, vesical tenesmus, urethral pain, ardor urinæ, dysuria, smarting sensation increasing to urethritis, scanty, red, bloody urine, painful erections as in gonorrhœa, with chordee. In all of these affections it has long been employed with success, also in purulent and foetid gonorrhœa. Barbier, Trousseau, Pidoux, &c., all expected from *their doses* of turpentine *some aggravation*, but the good results were afterwards seen. They call its mode of curative action "*a substitutive irritation*. In proper attenuations the curative effects are reached without the aggravation.

Chlorate of Potash.—Dr. Irwin (an Army Surgeon) uses no other remedy in urethral inflammation than Chlorate of Potash. His method of using it is as follows: one drachm of the salt, dissolved in eight ounces of water, of which an injection is given every hour for twelve hours. At the end of this time, the discharge has become changed and diminished; allowing the remedy to be gradually discontinued until the second or third day, when the disease will be generally found to have ceased."

This method is so harmless, so little likely to injure, by excessive irritation, causing a stricture, as compared with the caustics usually employed, that its merits should be tested. "I am now using it in one case with apparent benefit." (Dr. Hale.)

Tartar-emetic has occasionally cured obstinate gleets with promptness. Among its symptoms are: constant sticking pain in the posterior portion of the urethra, flaccidity of the penis, general debility, or complete impotence; pustules on the thighs and scrotum; pains in the testicles. Dr. Marcy says he cured two cases of involuntary emissions which had occurred as often as once in twenty-four hours for many months.

Ferrum.—Tinct. Ferri-sesquichlorid. Several drops in water three times a day, in debilitated anaemic constitutions. The pyrophosphate of iron, third decimal trituration is about the best of the iron preparations.

General invigorating influences, as change of air, temperance in living, local or general bathing with tepid or cold water, are important aids in the treatment.

Injections may finish the cure imperfectly accomplished by general treatment.

Complications of Gonorrhœa.—The chief of these are: Irritation and inflammation of the bladder, of the prostate gland, phimosis, chordee, erysipelas.

1. *Irritation of the Bladder.*—*Symptoms:* Painful and incessant urging to pass water, pain increasing at the moment after evacuation. Urine generally loaded with mucus, and in some cases intermixed with blood; suddenness of the call to urinate, usually at short intervals; aching pain in the region of the bladder; accelerated pulse, loss of appetite, and debility consequent on the fever.

Treatment.—Aconite and Cantharis in alternation will generally subdue the fever and inflammation in a few hours. Aconite may be alternated with Belladonna in ordinary febrile cases. In more chronic cases, Nux-vomica, Pulsatilla and Sulphur. Other chief remedies are *Cannabis*, *Lycopodium*, *Terebinthina*, *Uva-ursi*, *Copaiba*, and *Iodine*.

Camphor has been used with success in six-drop doses of the tincture for the violent and spasmodic urging to pass water. (See p. 75 to 78, this volume.)

2. *Phimosis.*—This is less severe and obstinate than when it results from chancre. In some cases the prepuce becomes thickened and constricted, is difficult to be retracted and an irritating discharge may accumulate beneath it. Ample cleansings with warm water and fine soap. The general remedies appropriate for the disease in general will be sufficient to cure it.

3. *Chordee.*—This gives much pain and prevents rest. The usual treatment designed for the fever and inflammation will subdue it.

4. *ORCHITIS.—INFLAMMATION OF THE TESTICLE.*—*CAUSES.*—It usually occurs after the suppression of urethral blennorrhœa, when the discharge either ceases entirely or becomes very slight. It arises in connection with gonorrhœa either sympathetically by propagation of the inflammation of the urethra to the testicles, or by metastasis after suppression of the discharge. The cause of the extension of the urethral inflammation to the testicles, is having gonorrhœa and not wearing a suspensory bandage when riding, dancing, &c., alcoholic liquors, coition, use of purgatives, cubebs, copaiba, turpentine, taking a chill. The cause of metastatic orchitis is often injections with cold water, or with saturnine solutions to suppress the discharge. In ordinary cases general fever begins with a hard stinging head-ache, which sometimes lasts, at least at intervals, for twenty-four hours, before the local disease becomes apparent. Then begin pain, swelling, extreme tenderness of one of the testicles which continues to increase during the first two days, and reaches the size of a small closed fist. The scrotum becomes red and tender; the spermatic cord extending from the testicle up the groin and round the loin of the affected side, becomes painful,

enlarged in size. In some cases the appearance of the scrotum corresponds with that of scrotal hernia, the pulse is small, quick, and jerking; there is shivering, thirst, and loss of appetite in some cases; beginning with a soft spongy feeling, the testicle soon enlarges to the size of a fist and more. Sometimes it goes from one testicle to the other. The pain in it is often shooting or pressive. The discharge from the urethra is diminished or suspended during the attack, and often returns when the inflammation subsides. The epididymis is usually most inflamed and swollen, and an examination of the orifice of the urethra usually shows its nature.

TREATMENT.—Our first care in this complaint should be to suspend the inflamed organ by means of a suitable apparatus, in such a manner as to afford complete support in all positions, and thus prevent the enlarged gland from dragging upon the spermatic cord. The recumbent posture should be strictly enjoined, and we should have constantly applied to the parts cloths wet with cold water. As soon as the cloths are warmed by contact with the inflamed testicle, they should be again dipped and reapplied until the heat and inflammation have disappeared.

If the disease has arisen from sudden suppression of urethritis, or from the use of powerful injections during the *acute stage*, we may give *Mercurius*, *Aconite*, *Nux-vomica*, *Spongia*, *Clematis*, or *Iodine*.

When it has been caused by the injudicious introduction of bougies, *Arnica*, *Aconite*, and *Pulsatilla*, will be found applicable.

In cases where the inflammation has degenerated into a *chronic induration of the testicles*, our best remedies are, *Aurum*, *Acid-nitric*, *Rhododendron*, *Sulphur*, *Mercurius*, *Spigelia*, *Iodine*, and *Cicuta*.

Aconite.—When the inflammation resists *Belladonna*, and the fever is prominent, alternate the two remedies. It may alone overcome the disease.

CASE.—A man aged twenty-seven years, contracted a gonorrhœa with inflammation at first in the left testicle, and afterwards at the expiration of six months the right testicle became involved. Both testicles considerably swollen, hard, hot, and very sensitive to the touch; scrotum red; constrictive, tensive, pressive pains, extending even into the bowels and the thighs, augmenting by jerking paroxysms, and worse in the afternoon and night; moderate fever, increased thirst, sleep disturbed in consequence of the pain—*Pulsatilla*, *Clematis*, *Nux-vomica* and *Nitric-acid* were employed without success. *Aconite* third one drop every three hours, effected a cure in four days. (*Guyler, Archiv de Stappf*, Vol. XIX. Cah. 2, p. 156.)

Belladonna.—The patient should be confined to the horizontal position, wear a suspensory loosely attached, so that the testicle should not hang down, and a thick soft linen cloth laid under the scrotum to

keep it in the horizontal position. With these adjuvants Belladonna has been generally successful, given only as high as the third dilution. If the pain does not rapidly yield, a cold wet compress applied to the part and renewed as often as it dries. *Symptoms:* the patient is excessively sensitive and nervous; there is intolerance of pain which partakes of the neuralgic character.

Nux-vomica, when shooting pain in the testicle persists after the use of the preceding. Nux-v. 6, has succeeded in removing it.

Pulsatilla—May follow Aconite; and these two remedies alone often cure the disease. (*Yeldham*, p. 28.)

Aurum—The pain in the spermatic cord is of a neuralgic character and is more severe in the cord than in the testicle, but is very distressing; the cord is enlarged to two or three times its natural size, being larger toward the abdominal ring. (*Yeldham*, p. 29.)

Arnica lotion to the painful region.

Tartar-emetic.—In cases conjoined with gastric symptoms, as furred tongue, bad taste, eructations, want of appetite, constipation, &c.

When orchitis, is very severe, Tartar-emetic has often a marked effect in reducing the inflammation and relieving the pain.

DIET.—Light unirritating food similar to that allowed in ordinary inflammatory affections.

When after the removal of the orchitis the gonorrhœa returns, *Petroselinum* and Sulphur may be given in alternation with advantage. When hardness of the epididymis remains, Sulphur 1, a grain daily for several days has succeeded.

Iodine is often useful in alternation with Sulphur.

Clematis.—Dr. Hirschel regards Clematis, as the principal remedy in the treatment of orchitis, especially when it supervenes on exposure to cold, after blennorrhagia, and if the testicle be indurated, sensitive to pressure, the scrotum red, swollen, with tearing, drawing pains, and retraction of the spermatic cords and region adjacent. Ruckert gives these indications for blennorrhagic orchitis: "painful induration with sensation as though grains of sand were disseminated upon the surface of the organ—sequence of ill-treated blenorrhagia." In a case after exposure to cold and damp, a blenorrhagia was accompanied with violent pains in both testicles, nocturnal aggravation, with fever; testicles hard, swollen, and highly sensitive to pressure; scrotum red and tense; discharge nearly suspended. Clematis 12°, two doses in three days. The symptoms subsided during the interval, and the discharge reappeared. The swelling of the epididymis continuing, Aurum 12°, completed the cure. (*Attomyr*, by Leon Simon, jr.)

In another case in which, from fatigue in hunting, a blenorrhagia was succeeded by orchitis with phimosis, and ulceration of the pre-

ly the left, became enormous; the scrotum red and tense as in hernia; fever intense with furious delirium. After Aconite, Clematis completed the cure. Indications : the testicle is hard, swollen and painful, with sensation of traction upon the spermatic cord. If it feels bruised to the touch, with tension of the groin, upper thigh, and scrotum, Ruckert gives Clematis 12° and Spongia 30°, or Clematis alone every twelve or twenty-four hours. Various indurations of the testicle, not of syphilitic origin, have been cured by Clematis. Dr. Destirne disputes the power of Clematis in the above cases, and refers the recovery to natural resolution.

IRRITABLE TESTIS.—*Clematis*.—A case of gonorrhœa had lasted many years. Cold had developed orchitis, the part swelling to the size of a child's head. The patient became sad and misanthropic. The following year, moist itching spots appeared on the palm of the hand, general condition improved; when the spots receded he had colics. He had intermitting pains in the left testicle, faintness and retraction when the organ was touched. Other symptoms were relieved by other remedies; the pains of the testicle were relieved by Clematis 1° for a whole summer; when they returned the year following they were dissipated by the same remedy.

GENUS XIV.—ULCUS.—ULCER.

An ulcer is defined as a purulent solution of continuity of the soft parts of an animal body; (the name *ulcus*, derived from *ελκος*, a sore). Ulcers may arise from any of the causes that produce inflammation, from wounds, from irritation of the absorbents by specific poisons, from any of the blood poisons already treated of, as scurvy, cancer, scrofula, or the venereal virus.

CAUSES.—The proximate or immediate cause is an increased action of the absorbents, and a specific action of the arteries, by which a fluid is separated from the blood upon the ulcerated surface.

VARIETIES OF ULCERS.—1. *Simple ulcer*, arising generally from a superficial injury, as a wound, bruise, abscess, or burn. (See Volume I., p. 641; Vol. II., p. 181).

2. *Sinuous ulcer*, which runs under the integuments. Its orifice is narrow, but not callous.

3. *The fistulous ulcer*, or *fistula*, a deep ulcer, with a narrow and callous orifice.

4. *The fungous ulcer*, the surface of which is covered with fungous flesh.

5. *The gangrenous ulcer*, which is livid, foetid, and gangrenous.

6. *The scorbutic ulcer*, which occurs in persons subject to the influence of scurvy.

7. *The venereal ulcer*, which occurs in the course of the venereal disease.

8. *The cancerous ulcer*, or open cancer. (See Cancer, page 282, Vol. II.)

9. *The irritable ulcer*, dependent on a psoric dyscrasia in the blood though excited by local causes. The edges of the sore are ragged, undermined, and sometimes serrated or notched. The surrounding surface is red or inflamed; the bottom of the cavity is composed of irregular hollows, which contain a thin, greenish, or reddish, acrid matter, which excoriates the adjoining skin. Instead of the healthy granulating surface, described in Vol. I., page 643, there is a white, or dark-red, spongy mass, which is irritable, extremely painful, and bleeding on the slightest touch. This form of ulcer occurs in persons who eat and drink too freely, or have suffered from fevers. When seated on the leg or ankle it becomes extremely painful and difficult to heal, and is called a "fever sore." (See Vol. II., p. 181; Vol. I., p. 647).

Indolent ulcers are common on the leg, in slovenly and intemperate persons. The surface of this form of ulcer is flat, has a shining appearance, and is covered with a whitish or dark-gray crust, which is exceedingly tenacious. Generally there is a profuse discharge of viscous cohesive fluid. The edges of the sore are elevated, smooth and rounded, the surrounding parts are swollen or hard, and the whole limb enlarged; but generally there is but little pain.

10. *Carious Cancer*, dependent upon carious bone.

11. The *Scrofulous Ulcer* which occurs only in scrofulous constitutions.

It is known by its having arisen from indolent tumors, by its discharging a viscid glairy matter, and its indolent nature. (See Scrofula, Vol. II. p. 259.)

12. *Varicose Ulcer*.—This occurs on the inner side of the leg or thigh in persons who have varicose veins.

TREATMENT OF ULCERS.—Ulcers are always curable by the simplest dressings, and the natural powers of reparation when they occur in healthy constitutions. Obstinate ulcers are invariably the result of some dyscrasia of the organism which should become the special object of attention. Even simple ulcers should be healed slowly, and under the use of proper internal remedies this can always be done. The following are the principal remedies:

Arsen., *Lach.*, *Asarum*, *Bell.*, *Calc.*, *Carb-veg.*, *Conium*, *Cuprum*, *Graphites*, *Lycopodium*, *Merc.*, *Phos.-acid*, *Rhus.*, *Sil.*, *Sulph.*, *Canth.*, *Chel.*, *Clematis*, *Solanum*.

Arsenicum.—Indolent ulcers on the leg, in old, feeble, or cachectic persons; scorbutic or scrofulous ulcers which are flat and superficial, or hard, callous and burning; ulcers which resemble cancer; fungous,

varicose ulcers of gray color with red areolæ, black or whitish-spotted surface ; those that bleed readily, suppurate, are inflamed, putrid, phagedenic and very painful, itching, smarting, burning, tearing or drawing.

Lachesis.—Indolent ulcers in old scorbutic or scrofulous subjects ; effects of Mercury, fungous ulcers ; deep, varicose, indented, bluish spotted, discolored, with red areolæ, turning black or spotted ; ulcers which bleed or become gangrenous, spread, and are surrounded by pustules.

Sulphur.—Every form of indolent ulcer in psoric constitutions ; in persons subject to asthma, urticaria, herpes or scrofula ; fistulous, carious or cancerous sores ; fungous or varicose ulcers, with indented edges, or red areolæ ; ulcers which turn black, suppurate or become putrid, without pain, or with boring and throbbing pains.

Carbo-vegetabilis.—Ulcers which burn and smell offensively ; atonic or indolent sores in old persons ; scorbutic, fistulous, and scrofulous ulcers ; those with hard callous edges ; fungous, varicose ulcers of yellow or black color, which bleed and become putrid, phagedenic and painless or torpid ; otherwise very painful, ichorous, burning, and fetid.

Cantharides.—Redness, inflammation and gangrene of the surface ; excessive debility, languor, and emaciation ; exudation of a serous liquid from a vesicated surface ; itching and lacerating ulcers of the leg ; strangury, and tenesmus of the bladder.

Case by Dr. Burdick, New-York.—A gentleman who had suffered from paralysis for sixteen years had a chronic ulcer on the calf of the leg. The surface presented a watery blister from which was discharged about one quart of serum per day. He was cured by the internal use of *Cantharides*.

Solanum.—All the species of this genus of plants are good remedies in malignant ulcers as well as carbuncles. One of the best local applications is the tomato. The powers of *Solanum-nigrum* in gangrene are referred to at page 346, this volume.

CLASS IV.—DISEASES OF THE NERVOUS FUNCTION.

ORDER I.—PHRENICA.—AFFECTING THE INTELLECT.

MENTAL DERANGEMENT.

The brain and nerves constitute the master tissue of the human body. It is *superiority of brain*, either in structure or conformation, which mainly creates the distinction between different individuals and different races. A thorough knowledge of this wonderful structure would enable us to explain some of the most mysterious inconsistencies and contradictions in human character, and many of the strangest events in human history; and would also render us more capable of comprehending the grand destiny of the human family.

The problem of man's objects and achievements on earth has only been partially solved by history, because historians have but partially understood his physical or mental constitution. The ancients thought him "*an intelligence served by organs.*" Modern philosophers have set themselves to investigate the "organs," and to explain away the "intelligence" into non-entity. We shall not enter into the controversy between them; but will endeavor to collect for practical uses the best results of observations and experiments which may illustrate the nature and treatment of the diseases which affect the human intellect.

In estimating the probable future of our world, the mental peculiarities and capacities of different races and nations must be taken into the account. Modern research has shown that national characteristics have continued unchanged from the remotest ages. The Arabians are just what they were in the days of the patriarchs. Very recently it was declared by ethnologists, that the Hindoos had altered in nothing since they were described by the earliest writers; and we know that thirty-five hundred years have made no difference in the skin, the hair, or the features of the Negro. The characteristics of the Jew may be recognized in the sculptures of Luxor and Karnac in Egypt, where they were depicted more than thirty centuries ago; and they bear the most striking resemblance to the Jews of the present day. Neither their residence in Palestine, nor their subsequent banishment into every country and climate of the world have made any sensible change in the personal frame, the form of the head, the color of the skin, or the lineaments of the countenance. (*Crania Americana.*)

The permanence of national characteristics in the features of well-known races is displayed in Egypt for the longest period known in

history. By the researches of M. Auguzre Mariette, in 1854, the most perfect specimens of the Egyptians, as they were in the time of the Shepherd Kings and Pharaohs and the builders of the Pyramids are placed side by side with their modern descendants; and they are shown to be identical in form and every feature, though about five thousand years of time intervened between them. (See Morton Gliddon, also Dr. Helmuth, *U. S. Journal of Homœop.*, Vol. I., p 682.)

The primary origin of the diversity and peculiarity of races presents a question which we will not enter upon here.

The present aspect of the nations gives reason for believing that the Caucasian race of men are soon to subjugate the whole habitable earth. Great Britain, says Dr. Caldwell,* "is but a speck in the waves, and yet her power is felt and acknowledged in every corner of the earth." The North American Republic exhibits a further development of the same Gothic Caucasian race, variously modified by Celtic additions. Its future is not to be calculated until other elements than those which appear in past history are brought to bear upon a problem yet unsolved; it will at least be a POWER among the nations, of which no one will fail to feel the influence. And what is the source of all this power? Its manifestation depends on the mental characteristics of the Anglo-Saxon mind in its union with "the largest best developed, best conditioned brain belonging to the human family. No matter how good the forms of other parts of the body may be, they owe that also to perfection of brain." Anglo-Saxons are known to compose the most highly endowed division of the Caucasian race; "their brains are larger, better proportioned, and, from temperament and exercise they are in better condition for efficient action." (Caldwell.) It is of the deranged action of this wonderful structure that we come now to speak.

Under the general term INSANITY it is common to speak of all or any of the usual perturbations of the intellect. There is no correct definition of the word. Perhaps, as Halford says, "insanity, like sense, admits of no definition." One of the best efforts at a definition is that of Dr. Wright, of the Bethlehem Hospital. "Insanity is a disease of one or more faculties of the mind, of the diseased manifestation of which the individual is unconscious, or not able to control." Some of the existing definitions would nearly depopulate all the asylums; others would confine in straight jackets, not only their authors, but nine-tenths of their readers.

The Roman law spoke only of two species of mental derangement, *Mento Capito, et furioso*. The Prussian law distinguishes

* Louisville Med. and Physical Journal.

have very generally been in some abnormal condition; and much of what they did do has been fairly attributed to constitutional peculiarities or to the morbid activity of some of their mental faculties. We mention a few examples only.

1. Richard Porson, Professor of Greek in the University of Cambridge, was distinguished for great acuteness and solidity of judgment, intense application, and a stupendous memory. His immense erudition had rendered him an object of general admiration; and his head, being the subject of general curiosity, was subjected to a *post-mortem* inspection by the anatomists. The account given of the dissection says that, "to the consternation of all phrenologists, but to the consolation of all blockheads, his skull was found to be thicker than that of any man that had been dissected in Europe." The phenomenon was considered inexplicable, and Dr. Gall was consulted. The founder of phrenology regarded the case as a perplexing one, and only answered: "How so much knowledge could get into such a cranium as that I cannot indeed comprehend; but I can well understand that, having got into it, *it would never be able to get out again.*"

2. Dr. Gall, the founder of the science of phrenology, died at Paris in 1828. It was thought proper that the man who had examined so many heads should have his own examined also. Again, the anatomists were astonished to find a cranium thicker than had ever been seen since the death of Porson—at least twice as thick as any other they could find—and the channels, worn by the throbbing of the arteries of the dura-mater on the inner surface of the parietal bones, were deeper than had ever before been seen. The soul had made a happy escape from a massive prison where it had long struggled with storms without and physical disease within. The last enemy that assailed it was allopathic medicine. The disease was a true gastritis which should not have been fatal. But a conclave of physicians gave him twenty grains of Quinine per day, for five days, and the tenant of the strong old castle surrendered it into their hands.

3. We find many examples among illustrious men, of intense activity of mind, accompanied by some extraordinary development of the bones of the head. Cardinal Ximenes, Archbishop of Toledo, and Prime Minister of Spain, wherever he went, whether toiling incessantly for the reform of the Spanish government, under Ferdinand and Isabella, converting the Moors to the Catholic religion, or leading a military expedition to the coast of Africa, was continually tormented with a pain in the head which no remedy would remove. The warrior statesman, in the costume of an archbishop, with a suit of armor over it, was little more than a "living skeleton." He is described as "gaunt, graceless and unprepossessing; his austerities had reduced him to a walking anatomy, though his carriage was erect, his forehead unwrinkled,

his features sharp and thin, his eyes small, dark, and deep set, and the general expression of his countenance repulsive and severe." Such was the appearance of the tall and ghostly leader who stormed the Moorish fortress of Moran, in Africa, and put the garrison to the sword. When tortured with neuralgia, he governed Spain by the force of his iron will; and when asked by what authority he ruled, he only pointed to his cannon. The Cardinal died in 1517, and his head was examined forty years afterwards. It was found so compact and solid that every vestige of the sutures was obliterated, and the whole cranium formed one hard and firm bone. To this peculiarity of his skull the Abbé Richard attributed the statesman's sufferings during life.

4. The same author says that when Cardinal Richelieu died in 1642, the reason why he had never suffered from headaches was seen; twelve small circular perforations were found penetrating the skull; "and through these the vapors from his brain had continually exhaled." This was the statesman who carried on wars for and against the different sects and governments of christendom, and then "covered up all his crimes with the red mantle" of murder and assassination. To such a man life is unhappy and death terrible.

Baron Larrey, the chief surgeon of the first Napoleon, says his illustrious associate in the army in Egypt, Mongé, made him a visit many years after the downfall of the Empire. "The good old man," says Larrey, "shed tears of sorrow" when he spoke of the loss of all his former patrons, offices, and titles. Profound melancholy and intolerable weariness of life darkened all his later years. After death it was found that the arteries of his brain were ossified, many of them hardened into bone. The mind and the body had acted and reacted upon each other. Fourcroy, the chemist, closed his life, also, in gloomy wretchedness; and in his brain, also, the arteries were found ossified.

Among the English poets there has been no one of whom everybody knows so much, and at the same time understands so little, as Lord Byron. The mere phrenologist inspects all the portraits, busts and memorials of the poet that can be found, and feels but partially satisfied. There is evidently something both higher and deeper in Byron's genius than physical conformation of the head would ever reveal. There is a loftier spirituality, as well a lower sensualism in his brilliant works, than the shape and size of the brain could alone have shown us. He had other physical peculiarities than those displayed there; he was the subject of disease through many years of his life; he inherited a feeble, irritable constitution, and suffered all his life the penalties of ancestral vices; and all that he achieved or endured on earth only cultivated a morbid activity of the brain and nerves.

Inspired by a misanthropic hatred of much that was wrong in his own country, and by admiration of some remnant of the ancient patri-

otism in the modern Greeks, he devoted his life, energies, and fortune to the liberation of the land of Demosthenes. There, under the influence of malaria, great mental exertion and despondency, he exhausted the powers of his over-active brain, and died on the 19th of April, 1824, having reluctantly submitted to a "copious bleeding," which settled the question of life and death with a reasonable degree of promptness. The *post-mortem* examination solved many of the mysteries of his life, and partially unravelled the perplexed web of the many contradictions in his character. The skull, like that of Cardinal Ximenes, presented the most remarkable compactness, having no sutures between the several parts of it; but all the different bones were perfectly consolidated into one, without any intermediate diploë,—the head resembling that of a man half a century older than the poet; the medullary substance preponderated largely over the cortical portion; the convolutions very numerous; the fissures deep. There were also evidences of long-continued irritation, such as could not fail to influence his mental capacities and feelings. It was this state of the brain that heightened and intensified his passions, and produced many of the wildest aberrations of his erratic genius. It was this, added to the usual morbid sensibilities of the digestive organs, and the long-persistent constipation and torpor common to literary men, that made the man who possessed the loftiest poetical genius of his time wish for death at a period of life when men, whose minds and bodies are more in harmony, are only beginning to live. Disease, which neither he nor the physicians could understand, drove him to desire severance from all the relations of a world which promised so little for humanity, and nothing for him. Ignorant himself of any rational medical treatment, he made no effort to relieve himself from any of his miseries.

A true estimate, then, of the character and genius of Byron, can only be made by taking into the account the size, form and relative activity of the brain; the causes which operated through all his life to render him morbidly irritable; his British education and travels in classic lands; his inherited rank and wealth; the physical constitution which he inherited, encumbered by the diseases and vices of an aristocratic ancestry. When we have seen some of the same passions and wayward tendencies developed by himself, and have measured the power of all the surrounding influences to cultivate all that was good and all that was evil in such a man, then, and not before, may we claim that we understand him.

But the physicians of our period regard all perversions of the mental faculty as mere symptoms of some morbid condition of the brain. Indeed so completely have these *physical causes* and *mental effects* been classified, that the precise location and the kind of morbid action in the brain, which produce nearly all mental disorders, can be designated.

~~DISORDERS OF THE NERVOUS FUNCTION.~~

The medical man of to-day looks only to the material brain and is apt to ignore any question of perverted or deranged intellect. He removes the ravings of the fierce and violent maniac, by throwing him into Belladonna upon his inflamed *tubercula quadrigemina*; or removes the movements and the frightful visions of the inebriate, by removing the patient with his excited brain and nervous system, Opium and ammonia; or the melancholy and despair of the hypochondriac, by doses of Aurum and Ignatia; or the homicidal or suicidal propensity by Stramonium, Aurum, Hyoscyamus, or other appropriate remedies.

Supernatural perversions, which were formerly regarded as mysterious agencies of Providence, are now known to be only symptoms of some disease of the brain and nervous system, and to be just as amenable to medical treatment as any other malady.

~~GATES I.—ARRANGEMENT OR PERVERSION OF THE LEARNING FACULTIES—INSANITY.~~

Derangement of the intellect has always been regarded as a mysterious disease. Dr. Rush said, that in attempting to write out his own observations on the "Diseases of the Mind," he felt that he was upon a subject in consecrated ground. No theory of the philosophy of the mind, either in health or disease, has ever been generally accepted; and a question of the *sanity* or *insanity* of the mind is a question which presents the most difficult problem ever presented in medicine.

Reasoning and intuition have generally been confounded; and even the connection between the metaphysical or *higher reasoning power* and that which reasons on the facts furnished by the evidence of the senses is not generally recognized; but it is believed that the separate existence and action of these two powers of the mind admit of demonstration. A few compressed statements on the subject are sufficient for present purpose.

It has been believed by the wisest philosophers of all ages, that the human mind possessed a higher reasoning power than that employed in reasoning on the *material objects* around them. It was observed by the earliest students of human nature, that some men who were weakly on all questions presented to the *senses* could comprehend anything of *higher abstract truth*; and a distinction was made between *physical* or *sensuous, material subjects* and *those which were metaphysical—that is beyond or above the physical*. This higher reasoning power, which was known as *pure reason*, was the spirit denoted under the name of MINERVA, or the goddess

of wisdom. She was the impersonation of that highest faculty which perceives truth intuitively, before it has time to demonstrate it through the slow processes of the *external senses*. Instead of having grown up during the course of successive years through the ordinary stages of life, she is represented as having sprung forth from the brain of Jupiter, armed with the spear of victory, and the far-seeing eye of inspired wisdom.

The ancients distinguished between the *higher reason* and the *lower reason*, called by many authors judgment or understanding. Plato, Seneca, and Aristotle made this distinction; and in modern times, Leighton, Harrington, Lord Bacon, Kant, Coleridge, and all other philosophers, except such as are imbued with the materialism of Locke, have confined the understanding to the office of reasoning on the objects of the external world, and called it "the faculty of judging according to sense." Animals, say these authors, have the power of *understanding*, as applied to the *things of time and sense*, but they have no perception of the subjects of *metaphysical* or spiritual contemplation, which are the proper objects of *pure reason*.

In its highest condition of development the nervous mechanism has a three-fold operation: 1. *objective ideas*, which arise in external facts; 2. *subjective ideas*, which exist in registered impressions; 3. *impressional ideas*, as the abstract truths of geometry, the issue of pure reason, and are therefore to be attributed to the essential nature of the soul.

It is believed that an impression made upon either of the senses is conveyed by a nerve connected with it to one of the ganglia at the base of the brain. Upon the vesicular contents of this, the change, whether chemical or mechanical, is made, which afterwards in some way corresponds to the outward and material object which caused the impression. Not, by any means, that this change impressed upon the ganglia necessarily at all resembles its material correspondent in form and color, &c.; it is simply *conventional* with the mind, as are the letters of a book, or in the dots and dashes of the telegraphic message. The act of *remembering*, then, is nothing but fixing the attention upon those ganglia, and thus discovering the changes which have taken place.

We may conjecture that these impressions on the ganglia are finally transferred to the mind proper, and form, therefore, an integral portion of it, thus constituting the faculty usually called memory.

GENERAL SYMPTOMS OF INSANITY.—In total or partial perversion of intellect the concatenation of ideas is broken, as in dreams,—producing incongruous combinations, which are repugnant to reason and common reflection. The person in whom the intellect is thus deranged may manifest it in different ways, and very often it is difficult to de-

whether any of the visible symptoms constitute positive evidence of insanity. "The tearing of clothes so common in this disease was one of the usual manifestations of deep distress among the Jews, probably from its being one of the natural signs among the nations of the east. The hallooing, stamping, and rattling of chains common among mad people are designed to excite counter-impressions upon their ears, to suspend or overcome the anguish of their minds; they wound and mangle their bodies for the same purpose. Even when there is singing and laughter, there is reason to believe that the heart is oppressed with sadness. The sadness and seeming apathy of manalgia are not always evidence of the absence of misery. 'The willow weeps,' says the poet, 'but cannot feel; the torpid maniac feels, but cannot weep. One insane person declared, that his sufferings from imaginary evils were vastly greater than any real ones could be.'

Insanity appears in various aspects, according to the causes in which it has originated. Some are gay and seemingly happy; some imagine themselves superior beings, and assume the importance of their supposed situation; some are delighted with flowers, some with playthings; some are revengeful and furious; others are silent. Thus they drag out their miserable existence. In one respect they are all alike; all have *incoherency of conception and incongruous ideas on at least one subject*, which may have caused their malady. Some consider themselves utterly miserable, and resort to various efforts to drive out their anguish of mind; they laugh, scream, cry, and especially seek to obtain ardent spirits and tobacco. Some, though previously silent and gloomy, become lively and loquacious as soon as tobacco is given them, or ardent spirits promised; they are cunning, suspicious, alive to injury, and quick in avenging it.

INSANITY INVOLVING THE AFFECTIVE FACULTIES OR FEELINGS, WHILE THE INTELLECT OR REASONING POWER REMAINS SOUND.—*Austerity of conduct and tyranical disposition* often present the principal visible evidence of a grade of insanity which no defect of reasoning power betrays. "In a well-attested case, a father systematically persecuted his children for many years, during which time he passed in the world for a man of great talent and probity; and it was only after the history of his life had been sifted by the best physicians that a tinge of insanity could be found in it." He had started in life with impractical notions of propriety of conduct, which he failed to realize in his children. He therefore conceived such a hatred for them that he persecuted them even to destitution and charges of the worst crimes. His success in prosecuting his plans, and in common business evinced anything but insanity (*Halford*). A strongly-marked

case of this kind is finely painted by M. Chateaubriand in the person of his father.*

M. Pinel gives the case of a man who had periodical fits of insanity, in which he was seized with uncontrollable fury which inspired him to a propensity to take up any weapon he could find, and knock on the head the first person who came in his sight. He experienced a kind of internal combat between this propensity to destroy, and the profound horror that arose in his mind at the contemplation of such a crime. There was no mark of wandering of memory, imagination or judgment. Although devoted to the happiness of his wife, he came near killing her, and had only time to bid her run to avoid his fury. "He said to me," says Pinel, "during his seclusion, that his tendency to commit murder was absolutely forced and involuntary. All his lucid intervals were marked by expressions of melancholy and remorse; and so great did his disgust of life become, that he often wished to put an end to his own existence. 'What reason,' said he, 'have I to wish to destroy the superintendent of the hospital who treats me with so much kindness; and yet, in my moments of fury, I am tempted to rush upon him as well as others, and plunge a dagger into his heart?'" (*Sur L'Aliénation Mentale*, p. 202).

Hospitals for the insane are never without some examples of mania, marked by acts of extravagance or even fury, with a kind of judgment preserved in all its integrity, if we judge of it by conversations. The lunatic gives the most just and precise answers to the questions of the curious; no incoherence of ideas are discernible; he reads and writes letters as if his understanding were perfectly sound; and yet, by a singular contrast, he tears in pieces his clothes and bed-covers, and always finds some plausible reason to justify his wandering and his fury. Such cases have been referred to as proving the plurality of the organs of the brain.

It is remarked that it is common for the insane to reason correctly, though from false premises. The man who believes himself to be composed of glass, reasons correctly in being afraid of being broken to pieces. The Prince of the House of Bourbon, who believed himself to be a plant, reasoned correctly in standing in a garden, and insisted on being watered with the other plants. The lunatic in the cell of the Pennsylvania Hospital, who thought the wheel-work of the universe moved only by his direction, was right in being afraid to withdraw his regulating hand from it; "for," said he, "it depends on me to move the balance-wheel of heaven, and if ever I should stop, the whole universe would stand still."

The point at which the mind may be said to become unsound is not

* *Memoirs of M. Chateaubriand*, 1861.

impulse, totally different from that which urges a sane man to commit such acts.

Legal authorities say that to prove insanity it is necessary to prove "insane belief." But in what does insane belief consist? Is it something either physically impossible or totally groundless? Many ignorant persons, not insane, can be led to believe in physical impossibilities, while many of the insane are possessed with one absorbing idea for which there is a foundation in reason and in fact. The East India captain, mentioned by Gooch, who, while a law suit concerning his father's will was pending, became insane, and imagined that he had suddenly come into possession of £100,000 a year, had no foundation, whatever, for that belief; but he immediately acted upon it; commenced an extravagant style of living, offered his physician a carriage and horses; and at length went abroad to dethrone the Turkish Sultan, promising his friend a magnificent seraglio; all of which, of course, failed of accomplishment. But there are other cases in which "insane belief" is founded upon real facts.

Legal Definition of Insanity.—"It is our duty to recognize no form of mental unsoundness which is not positively the product of disease." (*Dr. Winslow, Lettsomian Lecture, 1855.*)

A "delusion" is not to be acknowledged unless it be the product of a *diseased intellect*. Dr. Winslow says: "No notion of the mind however ridiculous, illogical, fallacious, and absurd, should be admitted to be a delusion, or evidence of unsound mind, unless it be obviously and unmistakeably the product of a diseased intellect." The *test* of insanity in all cases should be "the comparison of the mind of the alleged lunatic, at the period of suspected insanity, with its prior, natural, and healthy manifestations;" the consideration "of the *intellect in relation to itself*, to no artificial *a priori test*."

This example is given:—Dr. Forbes (*Brit. and For. Med. Chir. Rev.*, July, 1855, p. 214,) was called by a husband to certify to the insanity of his wife, whom he found at the first interview raving incoherently. On further inquiry, and on a second interview, he "learned from her ordinary medical attendant that her raving was a very frequent and usual exhibition of uncontrolled temper, and that what at first appeared as incoherence was derived from the trifling nature of the cause of the offence. There was nothing whatever unusual in her conduct at the time, however strange it might have appeared when compared with the average standard of lady-like manners."

1. M A N I A ,

Consists of an entire perversion and derangement of the intellectual faculties. The patient seizes at the same time upon topics the most

dissimilar, passing from one to the other, without order or arrangement, and reasons, draws inferences and forms opinions without any regard to logic or common sense. The intellect is deranged on all subjects; and the moral qualities indicate their perversion, by ferocity, unnatural hatreds, rage, quarrelsomeness, continual desire to do mischief, and an urgent propensity to carry into immediate effect any fancy which may strike the imagination. At the same time, the patient is perfectly conscious of his identity,—has a kind of idea of right and wrong, and is fully aware of what he is doing; but the mind operates through a diseased organ, the healthy equilibrium is lost, vague and absurd fancies take the place of true perceptions, and the individual is impelled to obey the dictates of his diseased imaginings. Mania is usually unaccompanied by fever, except, perhaps, at its very commencement, although there is a great exaltation of the mental and muscular powers. It has also been observed that maniacs are capable of enduring the most severe bodily inflictions, and the most intense cold, without evincing much consciousness of pain,—also extreme and protracted hunger and thirst, without serious inconvenience.

"Insanity," says Dr. Brigham, "often commences in a very insidious manner. Some appear to be deranged only as regards their feelings or moral qualities. They are noticed to be different from what they formerly were; to be more restless and sleepless, or unnaturally morose and irritable. Some manifest an unfounded dread of evil, say but little, shun society, and are suspicious of their dearest friends and relatives; while others are unusually vivacious and pleasant, or quarrelsome and abusive. Such changes of character and habits will usually be found to be subsequent to some reverse of fortune, loss of friends or sickness, and should excite alarm. Persons thus affected will converse rationally, and in company, or before strangers, will conceal their peculiarities; and thus are known to be insane but to very few, until some violent act leads to an investigation, and then it is found they have long been partially deranged. This is the case with most of those who commit suicide. Often insanity exists in a slight degree for months, and it is only noticed by the most intimate friends or relatives, and then *suddenly* assumes an alarming form, leading, in some instances, to homicide, and in others to self-destruction."

Frank asserts that "mania may alternate with hypochondria, melancholia, or dementia; that it may be continued, remittent, or intermittent. Intermittent mania returns every eight days, every month, every three months, every year, every two years," &c. According to the same author, "mania may terminate by many crises, mucous or bloody stools, vomitings, ptyalism, leucorrhœa, epistaxis, re-establishment of the menses or of suppressed haemorrhoids, varices, eruptions, erysipelas and boils. It may terminate by continued or intermittent

fevers. It may degenerate into melancholia, or dementia. The diseases with which maniacs finally succumb, are: cerebral fever, apoplexy, inflammation of the meninges, phthisis pulmonalis, and ulceration of the intestines." Complete exhaustion, also, of the physical and mental forces is a common termination of insanity.

2. MONOMANIA,

Is characterized by derangement upon some particular subject, which constantly occupies the thoughts, to the almost entire exclusion of everything else. When the patient's attention is diverted from the subject of his insanity, he reasons correctly and converses rationally upon all other topics presented to him; and even upon the subject of his derangement he reasons correctly upon his false data. Monomania may be of a gay or of a sad character, but in a majority of instances the monomaniac dwells upon a painful train of ideas. Sometimes a prey to the most absurd fears and dreads, as of poverty, being violently killed, suicide, homicide, of having committed the unpardonable sin, or of some serious impending calamity. Sometimes he imagines himself a clock, and stands in a corner of the room through the day, swinging his arms like a pendulum; or an animal, and imitates, as far as possible, its peculiarities; or that he has no legs or arms, and therefore refuses to walk or help himself; or that he is full, and therefore cannot eat or drink any more; or, like J. J. Rousseau, that all men are his enemies, and are seeking to ruin him. At other times he imagines himself to be the Savior, or a great prophet, or the emperor of the world, or some renowned statesman, philosopher or general, and swells about, issuing orders suitable to his fancied dignity.

Monomania may exist in a light form for a long period, without attracting particular attention. We have at the present time under our care two patients who have tormented themselves a good part of the time for years, and who have reduced themselves to a wretched state of health, with the dread of committing suicide or homicide; and yet they had the firmness to conceal their morbid condition from their friends. We have known other individuals who have been thrown into phthisis pulmonalis by silently brooding for a long time over some apprehended misfortune, like loss of property. The mind, like the body, requires rest and diversion; one set of muscles cannot be constantly exercised without becoming impaired in their functions; nor can the mind dwell upon a single train of ideas exclusively and for a long period of time without becoming deranged.

This malady, like mania, may be continued, remittent, or intermittent. The cure is generally preceded by some crisis, either physical or moral. The physical crises are: eruptions, sweats, vomitings and

diarrhoeas, tumors, fevers, acute inflammations of the brain. The moral crises consist of all those emotions or passions which, by violently pressing the brain, are capable of exciting a new action, which shall supersede the morbid affection. Under this head may be ranked sudden and startling news, fright, rage, violent grief, &c.

In some cases the reasoning power is impaired, but not wholly lost. Such persons sometimes reason with extreme acuteness, at the same time that they are deficient in the powers of perception. They reason from false premises, as we see many persons who are acknowledged to be sane, though their minds are not of the strongest. In the truly insane, the imagination very generally usurps authority over the reasoning faculties; and then the mind is like a ship in a stormy ocean without helm or rudder, driven before every wind. All persons in whom the imaginative faculty, or "Ideality" is very active, occasionally betray something of its preponderance over the reasoning power; thus,—as said by Dryden:

"Great wit and madness nearly are allied,
And thin partitions do their walls divide."

Insanity presents itself in various aspects, according to the causes in which it has originated. Some are gay and seemingly happy; some imagine themselves superior beings and assume the importance of their supposed situation; some are delighted with flowers, some with playthings; some are revengeful and furious; others are silent. And thus, under their various delusions and imaginary joys or sorrows, they drag out the weary months and years of a blighted life. In one respect they are all alike: all have *incoherency of conception and incongruous ideas on at least one subject*, which may have caused their malady. Some consider themselves utterly miserable, and resort to various efforts to drive out their anguish of mind. They laugh, scream, cry, and especially seek to obtain ardent spirits and tobacco. Some previously silent and gloomy, become lively and loquacious as soon as tobacco is given them, or ardent spirits promised; they are cunning, suspicious, alive to injury, and quick at avenging it.

The legal decision of the question of insanity is one of the most important as well as the most difficult ever presented to a court of justice. It may involve the punishment of an individual with death for the commission of an act, the moral guilt of which he is, from his unhappy state of mind, unable to judge; or the imprisonment of a sane man who, driven by rage, and perhaps impetuosity of temper, may exhibit some of those manifestations which the inexperienced and ignorant may call signs of madness. In either of these cases, and a vast number more, the greatest injustice and cruelty have been committed through the ignorance of physicians and the wickedness of designing

men. In every case we should be extremely cautious. The inexperienced should never give a positive opinion in a doubtful case. The probable *motives* by which an accused person could have been actuated must always be thoroughly studied, remembering that the state of mind at the time of the trial may differ widely from its condition at the time of committing the crime.

The investigation of a case of insanity requires the highest degree of professional skill, the most scrupulous delicacy in approaching the subject, an exquisite tact and ingenuity in tracing symptoms to their source, the most profound knowledge of the secret springs of human action, and all the diversified considerations by which the mind may be arrested, awed or conciliated. It will only be by acquiring an almost despotic ascendancy over the individual whose intellect is "lost in the stormy desert of the brain," that the physician can penetrate to the deeply hidden fountains of mental disquietude, and secret sources of physical disease. It will only be by gaining an intimate knowledge of the reciprocal action of mind and body on each other that the mystery of a perverted intellect can be comprehended.

Distinction between Real and Feigned Insanity.

REAL INSANITY.

When the paroxysm of the real madman is over, he tries to conceal his malady; he feels the unhappy infirmity of his nature, and shrinks from observation.

There is a peculiar cast of countenance which the experienced can detect, and which is difficult to counterfeit, particularly the sudden transition in the expression of the eye, from an unmeaning vagueness to a flushing intensity, when particular actions or passions are excited.

All the organs of sense are perverted: he will bear the most offensive effluvia and the most violent noises. He is wholly inattentive to physical wants, can endure long watchfulness; though all insane patients cannot equally endure privations. He tries to convince

you that he is *not insane*, and this effort furnishes the strongest evidence that he is so; he always betrays a morbid watchfulness to see if you suspect him of it. So far from endeavoring to give convincing proofs of his insanity, he

FEIGNED INSANITY.

The pretender to insanity is apt to overact his part. In company he is boisterous; when alone silent. He finds it difficult to sustain his assumed character for any length of time.

He endeavors to give convincing proofs of his madness. Some are so acute as to deceive us in this point; but so badly does he imitate the expression, and so difficult is it to keep up the deception that his powers of endurance fail, where one truly insane would persist for an indefinite time.

He finds it a difficult task to submit to the long watchings, fastings, and exposures to cold that the really insane endure without noticing them. He cannot avoid sleeping; he cannot mimic the solemn dignity of real madness, nor imitate the peculiar expression.

shrinks from observation; but betrays in every look that he is afraid you think him insane, just as a dishonest man fears somebody will suspect him of dishonesty; and when reason returns he avoids the most remote allusion to his malady. He feels the humiliating condition which it has pleased the Almighty to permit to fall upon him; and instead of being clamorous and determined to obtain his freedom, he seems insulted if his disease be alluded to; he is silent, submissive, unobtrusive, and deeply humiliated.

In real insanity we often see displays of astonishing intellectual efforts exhibited in a great many different aspects; but we more frequently see these displays in the exercise of the imaginative than the reasoning faculties. The dramatic poet Lee, wrote the Tragedy of Nero and several other plays in the Bethlehem Hospital for lunatics; and was, at times, excited to the fury of the wildest maniac. And yet all his plays were acted with applause before the same people who were only beginning to appreciate Shakspeare. Another English poet wrote a poem descriptive of his melancholy situation. Christopher Smart wrote his verses on the walls of his cell. Shakspeare, the master of the human passions and of the human heart, delineates in Hamlet and in King Lear the different forms of madness arising from grief. In Lear we see the characteristics of an arbitrary monarch, defying the fury of the elements; in the beautiful Ophelia the fondness for flowers, and the various emblems of sorrow. In Hamlet we have a form of insanity more feigned than real, which has perplexed jurists as well as physicians.

PHYSICAL SYMPTOMS OF INSANITY.—The eyes are more frequently dark; and the hair dark and dry; complexion swarthy, secretion from the nose diminished. Dr. Hill says maniacs have a peculiar fetid odor emitted from the body. This is certainly not universal, but we have personally remarked it in a large number of cases.

Arterial action is generally increased in the insane. Dr. Rush says it is generally stronger than in health. In 1794, two men were condemned to die for high treason against the United States, in one of the western counties of Pennsylvania. One of these was said to have become insane after sentence of death had been pronounced upon him. A physician consulted declared the insanity feigned. President Washington ordered a consultation of physicians. Drs. Shippen, Griffiths, and Rush examined the man and were not satisfied with the symptoms presented. Dr. Rush thought that the acceleration of the pulse "to

more than twenty beats above what it would be in health," would justify the decision that the man was insane. Dr. Shippen ascribed the quickness of the pulse to *fear*. We could not now accept the opinion of either of these great men as correct. But the influence of Dr. Rush prevailed with the President, and the man was pardoned.

But the most difficult cases that come before the court, involving the existence of insanity, are those in which it is the desire and interest of the insane person to conceal his malady. On this point Lord Erskine on one occasion said: "It is agreed by all jurists and is established by the law of this country and every other country, that it is *the reason of a man* which makes him accountable for his actions, and the *absence of reason* acquits him of crime. This principle is indisputable; yet so fearfully and wonderfully are we made, so infinitely subtle is the spiritual part of our being, so difficult is it to trace with accuracy the effect of diseased intellect upon human action, that I may appeal to all who hear me, whether there are any causes more difficult, or which indeed so often confound the learning of judges themselves, as when insanity or the effects and consequences of insanity, become the subjects of legal consideration and judgment." On another occasion the same great lawyer said: on one case he used every effort in vain before a court to prove an individual insane, until Dr. Sims came in and explained the nature and cause of the malady. His lordship then addressed the patient on that point, and he quickly evinced insanity to the full satisfaction of the court.

The descriptions of melancholy by Shakespeare are always accurate: "I have of late, wherefore I know not, lost all my spirits,—forgone all custom of exercise; and indeed it goes so heavily with my disposition, that this goodly frame, the earth, seems to me a sterile promontory; this most excellent canopy, the air,—look you, this brave overhanging firmament, this majestic roof fretted with golden fires—why, it appears no other thing to me than a pestilent congregation of vapors." In all the forms of madness Shakespeare's portraiture are acknowledged to be as faultless as his intuitional analysis of human characters as exhibited in men in their normal state. It has been supposed that he made the subject of insanity a particular study, as Crabbe and Scott certainly did after him. The various forms of the malady he has described—the perfect keeping of each throughout the complications of dramatic action—the exact adjustment of the peculiar kind of madness to the circumstances which introduce it, and to the previous character of "the sound man," leave us lost in astonishment. His test of madness given in Hamlet has been employed by physicians in determining the existence of the malady when other tests had failed to detect it.

"Ecstasy!

My pulse as yours doth temperately keep time
Ard makes as healthful music. It is not madness
That I have uttered; bring me to the test,
And *I the matter will RE-WORD which madness*
Would gambol from."

A case of this is given by Halford.

Of the authors of our time none have more correctly described insanity than George Crabbe. He made it a subject of such special study that he has been styled by a philosopher "the anatomist of the human soul;" and Byron characterized him as "nature's sternest painter, yet the best."

PATHOLOGY.—The pathology of insanity has perplexed all writers who have attempted it. Men afraid of encouraging materialism have represented the mind as so entirely independent of the body and so far above it, as to be entirely beyond its influence. And, finding no means of reaching the mind, except through some of the sentient avenues of the body, they have abandoned the subject of insanity as one that the physical agencies of material medicines cannot reach.

Our theory is that insanity always, when not dependent on, is, at least, *associated with physical disease of the body*. The extent of physical derangement is different in individual cases, and hence, its mental manifestation may be various.

1. The gradual development of mind from infancy to manhood, and then its diminution in power as old age approaches, is in exact proportion to the development of brain, when the influence of education and disease are taken into the account.

2. Insanity is a hereditary disease, as weak digestion, deranged hepatic systems, and other peculiar organizations descend from parents to children, and no one hesitates to refer these to the organization.

3. Insanity occurs at all periods of life when the mind is at the highest activity, when the organization is most perfectly developed, and in the highest degree of activity; hence it is more liable to be over-excited and thus become diseased.

4. Bodily injuries do often produce insanity. Early dyspepsia, hard study, or labor without rest produce it. Females, during menstruation, pregnancy, and after delivery, often become insane from the influence of powerful and peculiar actions going on in the system.

5. The influence of the weather on insanity, shows it to be a disease affected by those influences which operate upon the body. The supposed influence of the moon on this disease gave rise to the name "lunacy."

Cerebral Hemispheres.—Physiologists are agreed "that the gray matter of the cerebral convolutions is the true middle point at which

mind touches matter; where impressions become sensations, and the will develops itself into action; and in whose generated force alone (in the present state of being) the intellect finds its means of operation. With the gray matter of this centre no nerve is directly connected; but multitudes of white fibres pass from its cells to unite it with the motor and sensory centres, the ganglia at the base of the brain.

"Morbid affections of the gray substance of the cerebral hemispheres alone, will manifest themselves in various derangements of intellect. They arise either from deficiency or super-abundance of the quantity of blood supplied to them, or from vitiation of its quality; from the irritation of various poisons, generated within or introduced from without, or from idiopathic inflammation of the substance itself. To this head belong syncope, coma, and delirium in their various shades and complications. Whenever these symptoms appear, whether as the result of disease or of drug-action, we may be sure that the cerebral hemispheres are directly or indirectly affected."*

To understand these morbid conditions, if we imagine the process of secretion "arrested by cutting off the supply of blood," we have syncope. The want of blood may arise either from insufficient action of the heart, or from contraction of the cerebral arteries; the former being the cause of the syncope of Digitalis, the latter that of Hydrocyanic-acid. On the other hand, when the cerebral hemispheres are oppressed by abnormal congestion, we have coma, not the "spurious hydrocephalus of Gooch and Marshall Hall, which is merely a state of cerebral exhaustion, for which Zinc is, perhaps, the pathogenetic analogue," but the true coma, corresponding to oppressed secretion from congestion or effusion; and it corresponds in the former case to Opium, and in the latter, perhaps, to Hellebore. Simple inflammation of the brain gives, first, increased generation of force, on account of active determination of blood, and secondly, perverted secretion through the irritation of the cells. The first effect of Opium is increased secretion without perversion; while Belladonna, with its congeners, Hyoscyamus and Stramonium, produce perverted secretion, without increase (delirium) or with increase (mania)."

Induration of the brain, from long-continued sub-acute inflammation, is a frequent cause of insanity. In recent and slight cases of this malady, the intellectual faculties exhibit no very prominent derangement, but as the induration progresses and extends, the hallucination becomes more strongly pronounced, until eventually complete fatuity is the consequence. Solly believes that chronic inflammation of the dura mater is a very frequent cause of insanity. In *post-mortem* ex

* Dr. Richard Hughes, on the Nervous System, London, 1861.

aminations of those who have died demented, Esquirol has observed softening or increased density of the brain, adherence of the arachnoid, thickenings, atrophy and defective organization of the brain or cranium. See Vol. I., p. 702.

In monomaniacs, Pinel, Frank, and Esquirol assure us, "that organic lesion of the lungs and abdominal viscera, are more frequent than alterations of the brain." The latter writer supposes displacements of the transverse colon, to be amongst the most common of these derangements, and this is supposed to account for the constipation and the pains in the epigastric region, which are usually present in this variety of insanity.

Many cases have been reported in which no organic lesions have been found after death, either in the brain or the abdominal cavity, and on this account some authors recognize a *nervous* or *vital* monomania. It is probable, however, in all cases of mental derangement, that either the brain or its membranes are in a diseased condition, although our ordinary modes of examination may not enable us in all cases to detect it. But whether our perceptions be able to detect the departure from true physical health or not, we are satisfied that every form of mental derangement is associated with physical disease of the brain. It may not in all cases, or even in a majority of cases, originate there. It is a true *neurosis*, at least, and often originates in the digestive system. The nervous system of the stomach is, in every case of morbid sensibility of the stomach, reflected on the encephalon, which is then secondarily affected, giving rise to all the extravagant and incongruous imaginations of the hypochondriac. The direct influence of the condition of the brain upon the mind may be seen in a few well-marked phenomena, observed by unquestioned authors. Sir Astley Cooper says: "A young man had lost a portion of the skull just above the eye-brow; I distinctly saw the pulsation of the brain; it was regular and slow; but at the same time he was agitated by some opposition to his wishes, and directly the blood was sent with increased force to the brain, and the pulsation became frequent and violent." If we omit to keep the mind free from agitation, our other means in the treatment of injuries to the brain will be unavailing. (*Lectures on Surgery*, Vol. 2, p. 279).

Effect of Sleep on the Action of the Brain.—Blumenbach saw in one case the brain sink when the patient was asleep, and swell again with blood the moment when he awoke.—(*Elliottson's Edition*, p. 283.)

Dr. Perquin says he saw in the Hospital of Montpellier, in 1821, a female who lost a portion of the scalp, skull, and dura mater. When she was in a dreamless sleep, the brain was without motion, and lay within the cranium. When sleep was imperfect and agitated by dreams, the brain moved and protruded without the cranium forming

hernia cerebri. Vivid dreams protruded it considerably; wakefulness still more. A similar case is given in the *Med. Chir. Review*, (Oct., 1833, p. 336.) When excited by fear or anger, the young man's brain protruded greatly, so as to disturb the dressings, and throbbed tumultuously. Thus the brain, like the muscles, is more fully supplied with blood when in a state of activity than when at rest.

Change of Size of the Brain.—Sir Charles Bell says: (*Anat.* Vol. II., p. 390), "We have found that the bones of the head are moulded to the brain; and the peculiar shapes of the bones of the head are determined by the original peculiarities in the shape of the brain." Again: "I have seen one striking instance of the skull decreasing in size with the brain. It occurred in an individual who died at the age of thirty-two, after having labored under chronic insanity for upwards of ten years, and whose mental weakness advanced in proportion to the shrinking of the skull. The diminution of his head in size attracted his own attention during life."

Cuvier is still more explicit. He says: "In all mammiferous animals the brain is moulded in the cavity of the cranium which it fills exactly. So that the description of the osseous part affords us a knowledge of, at least, the external form of the medullary mass within." "Magendie says "the only way to estimate the volume of the brain in a living person is to take the dimensions of the skull."

Delirium characterizes *inflammation of the periphery* and is commonly wanting in inflammation of the deep-seated portions. Delirium marks disease in that portion of the brain in which the mental organs are located by the phrenologists.

Arachnitis.—"There is a remarkable difference between the symptoms of arachnitis of the convexity of the brain and that of the base. The researches of some celebrated French pathologists led them, after a most careful series of investigations, to adopt this opinion, which is borne out by my own observations and appears to me to be founded in truth. In arachnitis then of the *convexity of the brain*, we have permanent and violent symptoms; early and marked delirium; sleeplessness, and then coma. But in arachnitis of the *base of the brain* the symptoms are more latent and insidious; there is some pain, and the coma that follows is profound; but there is often no delirium. Pathology shows that we may have most extensive local disease in the *central* parts of the brain, that we may have inflammation, suppuration, abscess, and apoplexy, without the slightest degree of delirium." Indeed the central portions of the brain appear more connected with another function of animal life—that of muscular motion and sensation.—DR. STOKES, Dublin.

CAUSES.—The causes of insanity may be divided into physical and moral. *Physical Causes.*—*Injuries inflicted upon the Head.*—Dr.

Winslow says; "The importance of this subject cannot be exaggerated. Repeatedly have I found cases of epilepsy bidding defiance to all treatment, tumors, abscesses, cancers, and softening of the brain, as well as insanity in its more formidable types under my care, whose origin could unquestionably be traced back, for varying periods of one two, five, eight, ten, fifteen, and even twenty years, to damage done to the delicate structure of the brain by injuries inflicted upon the head! Injuries of this character occurring in persons of a strumous habit, or to those suffering from long-continued debilitating diseases, impaired and perverted nutrition, over-wrought and anxious minds, or inheriting a constitutional liability to mental or cerebral disease, are frequently followed by serious and often fatal results."*

Poisons, &c.—Medicinal substances capable of powerfully impressing the cerebral organs; irritating gases, as carbonic-acid gas, nitrous-oxyd gas; vapors of ether and chloroform; alcoholic liquors, opium: opiates, and other narcotics; mercury, electric shocks, sun-strokes, excessive labor, violent exertions, straining, masturbation, protracted sea-sickness, exposure to great degrees of heat, sudden exposure to cold water; other diseases, repelled eruptions, excesses in sexual pleasure, drying up of old ulcers, or of accustomed issues; turn of life, suppression of menstrual or lochial discharge, metastasis of rheumatism, gout or other disease; syphilis.

Want of sleep is the "most frequent and immediate cause of insanity, and one of the most important to guard against." Dr. Brigham dwells upon this cause with much earnestness, and endeavors to impress upon all, the vast importance of "securing sound and abundant sleep." "Long-continued wakefulness," says he, "disorders the whole system. The appetite becomes impaired, the secretions diminished or suspended, the mind dejected, and soon waking dreams occur, and finally phantoms appear, which at first may be transient, but ultimately take possession of the mind, and madness or death ensues."

Cause.—These comprise: over-exertion of the intellectual and emotional organs, excessive and protracted grief or mortification, intense love and ambition, jealousy, remorse, anxiety, exclusively directed thought upon a single subject, or a single train of ideas, enthusiasm, vivid and unrestrained imagination, immature education.

Efficiency of early Physical and Moral Education.—In order to one case with blood, Dr. Perez says, "the averted from those who are physically predisposed female who should be taken to form a character not subject to she was in a condition, and caprice. The utmost attention should within the era of life, giving a good bodily constitution. Such children should dreams, the brain, and the functions of the Brain and Disorders of the Mind."

be confined but little at school; they should be encouraged to run about the fields, and take much exercise in the open air, and thus secure the equal and proper development of all the organs of the body. They should not have the intellect unduly tasked. Very early cultivation of the mind, and the excitement of the feelings by the strife for the praise and the honor awarded to great efforts of mind and memory, are injurious to children, and to those who inherit a tendency to nervous diseases or insanity, most pernicious. In after life, persons thus predisposed to insanity should be careful to avoid engaging in any exciting or perplexing business or study, and should strive, under all circumstances, to preserve great equanimity of temper." (*Dr. Brigham's Sixth Annual Report.*)

Effects of Over-exertion, Mental and Physical.—The restless, enterprising Caucasian, in his march towards the empire of the globe, finds many obstacles in his path which never trouble the lethargic brains of other less intellectual races. Civilization is endeavoring to subdue the earth at an immense expense of muscular and mental effort. We find man now more restless than ever, though the age in which we live be

"The heir of all the ages in the foremost files of time;"

though it makes more rapid discoveries and advances than any former age could do; there is a general feeling of "unrest," anxiety, impatience, restrained expression. This "Stoic eye and aspect stern" which everywhere "mask hearts where grief hath little left to learn," may be seen in every street and thoroughfare of every city in the world. "The race of life," says Carlyle, "has become intense; the runners are treading on each others' heels; woe to him who stops to tie his shoe-strings."

1. The struggle for wealth, fame, and position in civilized society demands an intensity of effort, which none but sound minds in sound bodies can endure without exhaustion. There is everywhere over-exertion of mind, without corresponding physical labor; there is effort to work the brain more and the body less; to speculate upon a small amount of borrowed capital, paying high interest, high rents, and meeting the requirements of society by making heavy sacrifices of mental tranquility, as well as of moral principle.

In some walks of human industry, machinery has not yet superseded human muscles, and here we find that competition and surplus labor are ever at work in goading on the exhausted bodily powers to work against time, at over hours, or under such peculiar disadvantages as render the labor to be performed little less than a slave-like task of endurance. The hod-carriers, the coal-heavers and the factory children are wearing out their physical energies by excessive toil, and

study with a wet towel round his heated head, pale, faint, and trembling, lest his sands of life should run out before his insatiable appetite would be satisfied with acquisitions and praise." The effort to work the brain more and the body less, is a general cause of insanity at the present time. In every department of labor and business there is an intensity of mental effort to accomplish that which physical labor formerly toiled to perform. The mail-carrier of 1825, is described as "a merry, robust fellow, loaded with capes, top-boots, and driving at the rate of ten miles an hour."

"He whistles as he goes, light-hearted wretch,
Cold and yet cheerful—messenger of grief
Perhaps to thousands, and of joy to some,—
To him indifferent whether joy or grief."

The mail-carrier of our time is "a pallid, meagre, sharp-visaged man, clad in a short blue jacket, and devoid of all superfluous clothing or impediment; but with a restless look that shows the rapidity with which he is accustomed to move, guiding hundreds through the air." This restless, reckless man, who directs the railway locomotive at the rate of thirty miles an hour is a type of the time of the ascendancy of mind over matter.

The man of capital is obliged to develop new powers and combinations of powers to enable him to compete with the numerous enterprising and adventurous fortune worshippers who surround him. The laborer must work earlier and later; and under this perpetual stir and agitation, the nervous systems of men and women generally are much more irritable than they were a quarter of a century ago; all the causes of insanity are thus, in the present day, on the increase. Miss Dix said, in 1860, that ten years ago she estimated the proper subjects for lunatic asylums at 1 per 1,000 of the population; now she estimates them at 1 to 490.

The increase of insanity among American women is in part accounted for by the increasing number of household duties that the present demands of society impose upon women who are not able to employ a sufficient amount of domestic help. Civilization is defined as "the art of keeping up appearances." In the effort to keep up a good exterior, it is common to see the heart-broken and discouraged wife or widow, "lose in turn her appetite, her rest, and her strength; her nervous system becomes prostrated, and sinking under her burdens, she seeks rest in the lunatic asylum."

The remote and predisposing causes of insanity are, in a large proportion of cases, traceable to "malign influences of childhood." Dr. Butler says: "When the duty of making home happy shall be better realized, we shall have in our land less of vice and crime, and much less of insanity. The neglect of physical training, and the imperfect

many are endeavoring to drown mental labors; and the barrister, the student, the labor for twelve or sixteen hours per day, in over-action of the brain, at the same time, physical powers to decline for want of exercise. These classes of persons are the deleterious ones, or even to mental labor alone. Dr. A. says, "the work that injures a man, it is the physical alone might be performed without fatigue, performed under an intense pressure." Men who perform the physical as well as the mental, of restless thought; they are involved in momentous undertakings; and are tormented by long waking hours of anxiety by day, and of insanity observed in moderation, which long continue, and the excesses to which all classes of our population after increase the relative number, let us not presume to doubt.

2. Mental excitement, as one of the causes of anxiety, produce temporary excitement, involving the brain and nervous system.

3. The tendency of the mind to a morbid activity of the physical and mental organs. The reading as well as the writing, succeeded by a reaction of the nervous powers than any degree of reasoning faculties. The attainable objects, whether of prudence, philosophy, or shortened life. On the other hand, commencing with Lord Tennyson, average age of 18, and ending with Byron, was but a sinner and lawbreaker, temptation impossible. As a machinist, strains his face, until it is reached, while he is in the best health, in which the singular habit of body, he is more liable to som

London Lunatic Asylum, 1860.

† Report of 1848

itself merely by unnecessary deviation from the usual modes of the world. My poor friend, the poet Smart, showed the disturbance of his mind by falling on his knees and praying in the street, or any other unusual place. Now, although rationally speaking, it is greater madness not to pray at all, than to pray as Smart did, I am afraid there are many who do not pray, and yet their understanding is not called in question."

The incipient stage of religious melancholy is pourtrayed by Crabbe, in the description of the young female who earnestly desired to escape from earth. She says:

"And here is something, sister, in my brain,
I know not what—it is a cure for pain;
But is not Death! no beckoning hand I see
No voice I hear that comes alone to me;
It is not *Danza* but change: I am not now
As I was once, nor can I tell you how:
Nor is it ~~no~~ *incess*—ask and you shall find
In my replies the soundness of my mind:
O! I should be a trouble all day long;
A very torment if my head were wrong."
At times there is upon her features seen
What moves suspicion.—She is *too* serene
Such is the motion of a drunken man
Who steps sedately just to show he can."

Mental Extravagance.—Men devoted to abstraction and fiction lose the realities of life in an ideal world of their own. Their eccentricities then are not extraordinary. They create and converse with their own imaginary beings till it is not strange if their views of real life should become absurd. The question is, do their productions arise from a heated imagination or are they the result of calm reflection, invention, and profound observation.

Rousseau had powerful and luxuriant imagination which could clothe the most common-place objects in splendid and illusory forms; but we see also in the man intense morbid imagination. His favorite dogma was that natural was superior to civilized man. He saw humanity only as it may now be seen amid the superficial false splendor and the revolting corruptions of the rich, and degradation of the poor of a great city: and then set his imagination to picture out the contrast between the corrupted civilization and an imaginary life of simple nature. Painting the ~~more~~ savage life he painted it as he fancied it might be, connecting with it everything virtuous, delightful and happy. The influence of the imaginative writers has softened many of the roughnesses of our nature, but they have also cultivated an abnormal effeminate ~~weakness~~: raised extravagant theories and airy castles in the air. The uncultivated heart wildly hopes to see realized, without further ~~obstruction~~ in the way by which they may be reached.

Imagination, poetry, and eloquence kindle the unregenerate mind into ungovernable passions, which take possession of whole communities. Thus Cæsar was murdered by his friends. Henry the Fourth of France by Ravaillac, and Kotzebue, the poet by an infatuated German student and in our own time, demagogues play upon the passions of the multitude ; and men exert their power in exciting revolutions which they know not how to control or direct to good objects.

The success of M. Esquirol in demonstrating the existence of partial insanity has led to a more humane administration of the criminal law ; but it is not to be denied that medical men have often been influenced by acute counsellors to detect a case of monomania or "moral insanity," where a little better education and wholesome restraint ought to have made a good citizen. The plea of moral insanity has become so common in criminal cases, that scarcely any murderer omits to try its efficiency, and we regret that medical testimony in such cases is not more highly respected. In a late murder trial in this city the judge in his charge to the jury said, he "could make very little of the medical testimony, either in the case then before him, or any other that he had been called upon to hear." The frequency of this form of derangement, which is in fact much more common than any other, indicates the great importance of considering the most effectual modes of controlling or preventing it. The best view of it we find is that given by the Rev. J. Barlow, late Secretary of the Royal Institution, in a small work "On Man's Power over Himself to Prevent or Control Insanity." The principal position contended for by this author is, "that the difference between sanity and insanity consists in the degree of self-control exercised by the individual." Now, when we consider in how many cases insanity is caused by self-indulgence, and by want of that rigid discipline of mind which of all things is the most important lesson, he is required to learn between the cradle and the grave, we see the importance of inculcating everywhere self-culture and self-control. In the first report to which we turn, of 256 cases of insanity produced by physical causes, we find 127, or more than one-half resulted from defective moral control. Of these 64 became insane from abuse of stimulant drinks ; from masturbation, 23 ; libertinism, 24 ; use of mercury, 16. Among the other usually named moral causes of insanity we find "domestic griefs, reverses of fortune, jealousy, injured self-love, religious enthusiasm." But do not these ordinary trials of temper and moral courage come to us all, and exert what influence they can ? And might not some of them, if not moderated by firmness, humility, and correct ideas of the uncertainty and brief direction of human happiness, pervert the powers of reason. The man of strong mind may be agitated by passion, or lured to evil indulgence by temptation ; but he represses the wild thoughts that rush through his mind, and seeks for

better and truer impressions from without or from within ; "the man of weak mind yields to them, and then he is insane." Dr. Connolly truly says : " Seeing that any feeling in excess—the love of pleasure, or of ease, or of money, or of expense, or of applause, or that of self-denial, or anger, jealousy, hope too sanguine, or sorrow too much indulged—may become independent of the restraint of the comparing powers," we must perpetually inculcate the importance of cherishing "that governing and protecting action of the mind by careful cultivation and exercise."

"Whoever will converse with lunatics, will soon be satisfied that a very small portion of them consists of persons whose talents have been regularly and judiciously cultivated. The advice of Crabbe, if followed, would have saved many an unhappy mortal from the sad experiences of insanity :

"But ah ! though time can yield relief,
And soften woes it cannot cure ;
Would we not suffer pain and grief,
To have our reason sound and sure ?
Then let us keep our bosoms pure,
Our fancy's favorite flights repress ;
Prepare the body to endure,
And bend the mind to meet distress."

Prichard describes as *moral insanity* that variety called by Pinel "manie de caractere." It is a slight perversion of the instincts and affections which renders the individual a scourge to all around him, and which is yet unattended with any mental delusion. These are turbulent, unmanageable beings, choleric in disposition, committing various censurable acts, which they are always ready to justify by plausible reasons ; and who become to their friends and families a continued source of quietude and grief. They commit mischief for amusement, malice, or wickedness, and are incapable of application or labor. They break, disarrange, and destroy everything. Individuals afflicted by this partial perversion of the disposition, commit out-of-the-way actions, and maintain the most singular and absurd conversations, well knowing all the while what they do and what they say. The understanding suffers no lesion ; the patient is enabled to justify his proceedings with a surprising connection and lucidity of ideas and expressions. There is but an *instinctive perversion*,—a general exaltation of the bad propensities, but rarely to the extent of insanity. When this perversion of the affections complicates ordinary insanity, the "lunatic becomes the most insupportable of beings, creating eternal confusion and quarrels among the other inmates, and their attendants, which seems the chief object of their lives."

Since we cannot here go into the *Medical Jurisprudence of Insanity*, it is proper to refer to one or two of the best authorities on

that subject. The work of Wharton and Little, published in Philadelphia, 1855, (pp. 815,) contains two long chapters on the abuse of the plea, of Moral Insanity in criminal cases. See also *Wharton's Criminal Law*; and Dr. Little on the Psychological branch of the subject; Wm. C. Townsend on Modern State Trials; *Taylor's Medical Jurisprudence*; *Blackwood's Magazine*, 1850, p. 548. The best known of American works on this branch is that of Dr. T. Romeyn Beck, who died at Albany, Nov. 19, 1855. At the Convention of the National Association of Superintendents of Hospitals for the Insane, held in New-York, May 19, 1863, Dr. McFarland, of Illinois read a paper on the Minor Forms of Insanity, in which he stated that he had examined 2,400 cases of insanity without finding one of "Moral Insanity;" and he also quoted another observer, who found only *one* case among two thousand insane persons.

PROGNOSIS.—The first question asked by the friends of the insane patient will be: "Is there any probable chance for recovery?" The answer will be influenced by the causes of the disease, and must be given only after mature consideration.

We too often regard insanity as hopelessly incurable. It is very often cured when it arises from temporary causes, such as the following: derangements of the digestive organs; menstrual irregularities; sudden suppression of an external eruption, or ulcers of long continuance; metastasis of gout; utero-gestation; consequences of parturition.

Any of these causes having originated the disease by producing undue determination to the brain, may be removed by proper treatment; and the diseased organs restored to their natural functions, the mind resumes its natural powers. But an apparent recovery must always be looked upon with extreme caution, if not with distrust; ample allowance must be made for the proverbial cunning of the truly insane; and many do really improve to an extent that raises the highest expectations in the minds of their friends, "and then suddenly assume an alarming form, leading in some instances to homicide, and in others to self-destruction." (*Dr. Brigham.*)

Mania may alternate with other forms of insanity, and thus change its aspect. It may be continued, remittent or intermittent, returning at variable intervals. When it does really terminate, it is often manifested by some physical crisis, as: "Mucous or bloody stools, vomiting, ptyalism, leucorrhœa, epistaxis, re-establishment of the menses, or of suppressed haemorrhoids, varices, eruptions, erysipelas, or boils. It may terminate by continued or intermittent fever, or may degenerate into some more hopeless condition, as melancholia or dementia." (*Frank.*)

The cases less likely to be cured are: those in which insanity is associated with organic diseases of the brain, or hereditary predisposition; insanity produced by moral causes; melancholia, especially

in persons advanced in life; men are more difficult to cure than women, religious mania, or that excited by religious enthusiasm; cases caused by morbid excitement of the imagination to the extent of overcoming the reasoning powers; in such cases the wildest phantoms constantly hold possession of the unhappy sufferer's mind.

In the more hopeless cases certain *physical peculiarities* reveal the extent of the physical disease associated with, if it did not produce the mental disease. There is great torpor of the alimentary canal from atony of the chylopoëtic viscera, or from primary derangement of the nerves of these viscera. Strong doses of purgatives were formerly given to such patients and they were found remarkably insensible to their effects. The skin is generally swarthy and dry. Dr. Haslam examined 265 insane patients, and found that 205 of them had swarthy skin; the remaining 60 had fair skin, with light brown hair. Dr. Rush found the secretion from the nose suppressed in two-thirds of the patients in the Pennsylvania Hospital.

In cases that terminate fatally, the diseases under which maniacs generally die are: Brain-fever, apoplexy, inflammation of the meninges of the brain, phthisis pulmonalis, ulceration of the intestines, or complete exhaustion of the physical and mental forces. The symptoms of a speedy termination in death correspond more nearly with those of a fatal termination in other diseases. The usual symptoms of a sinking of the powers of life are often accompanied by a speedy subsidence of the mental symptoms of insanity.

Sir H. Halford gives a case of a man aged twenty-four, who, after free use of Mercury, took cold, had fever and delirium on the 5th day. On the 7th the excitement was high. He stood erect in his bed, his eyes flashing fire,—was exquisitely alive to every movement about him, and was so irascible that none could approach without exciting him to the greatest degree of fury. He was put under coercion, and Tartar-emetic in grain doses. On the 11th day he became quite calm, and seemed much better. He had repeatedly said that he should die, made arrangements for all business affairs, paying debts, &c. Sent messages to his mother, and talked much of a sister who had been dead for a year or two, whom he would now follow. "I asked," says Halford, "if he had slept, and whether his pulse had come down. The messenger answered that he had not slept, and that the pulse was quicker than ever. Then I perceived that the specious improvement was unreal, and that the clearing up of his mind was a fatal symptom, a lightening up of the vital powers before their total extinction; and I said, he *will die forthwith*. Entering the room he did not notice us. His eyes were fixed on vacancy he was occupied entirely within himself, and all we could distinguish was an indistinct mention of his sister. His hands were cold, pulse

indistinct and rapid. He died the same night." (*On Death and Madness*, p. 96.)

TREATMENT.—Up to the close of the last century, insanity was everywhere treated as a crime, by confinement in a dungeon with chains and fetters. From the time that Hahnemann took charge of the Asylum for the Insane at Georgenthal, in Thuringia, at the request of the Duke of Saxe-Gotha, to the present time, a slowly progressing reform has been making its way in the world. It was only two years after Hahnemann had conceived the grand idea of a *homœopathic law of cure* applied to the treatment of all ordinary diseases of the mind, and succeeded in restoring the intellect of the Hanoverian minister, Klockenburg, who had been driven to insanity by a satire of the poet, Kotzebue. It was in 1792 that Klockenburg was cured; and in the same year, Pinel, acting under some high intuition, which transcended all the wisdom of the medical schools, cured his first patient by knocking off the chains of the most boisterous of the raving patients of the Bicêtre of Paris, and treating him as a man and friend. Since that time insanity has been regarded as a curable disease. Hahnemann's account of his first experience in the "non-restraint" system of treatment was first published in 1796, showing that he and Pinel were its first advocates. Truth travels slowly in this world; and now, after more than three-score years of further experiment, insanity is a most formidable enemy of human happiness. So lately as 1842 there were but few hospitals for the insane in the United States; and in the States where none existed, the public prisons and private dungeons were often occupied by chained and fettered maniacs. In that year we saw in one of the newer States several patients handcuffed and chained as criminals, in private houses; and each one of these kept a whole neighborhood in terror.

We all remember that but a few years have passed since there might be witnessed in every city or county of our country,

"A sight—the saddest seen in time!—
A man to-day the glory of his kind,
In reason clear, in understanding large,
To-morrow chained and whipped
By servile hands; sitting on dismal straw,
And gnashing with his teeth against the chain,
The iron chain that bound him hand and foot:
And striving still to send his glaring eye
Beyond the wide circumference of his woe."

A modern Italian author says he "saw a lunatic who sat for twenty-five years on a stone floor, beating the stones with his chains, without leaning to rest himself day or night." "Surely," says Dr. Johnson, "there is scarcely anything in the pages of Dante's Inferno more tremendous than this!"

The treatment of insanity is, at this day, generally conducted in public asylums, in which only *one-half* of the Hahnemannian idea is carried out. Though these institutions are endowed with wealth of nations or states, the reliance of those who have them in charge is mainly upon *moral management*; but even *this* is in accordance with the homœopathic law, as far as it goes. We do not object to it; we desire to see it promoted and extended. But Hahnemann also proposed a *medical treatment*, which was successful in his hands, and in the hands of his followers also; though they have been compelled to treat their patients under the same disadvantages that embarrassed all other physicians before asylums for the insane existed, controlling them as well as they could at their homes. The insane have a right to share the benefits of the best influences of the asylum, and at the same time, the best medical treatment that homœopathy can bestow.

The successful treatment of insanity requires an extraordinary capacity for comprehending and applying all the agencies that have power to influence the human mind in disease, as well as in health; and a degree of tact and versatility in applying those remedial measures to the circumstances of individual cases, which can only be acquired by extensive observation and experience, based on a thorough knowledge of the results attained by the profession at large.

MORAL TREATMENT.—A majority of the cases of insanity arise from moral causes, such as undue exercise of the emotions and passions. It was this observation that led Hahnemann to employ moral influences of a *similar* character in the cure of his first patient; and thus, in a manner entirely homœopathic, although the idea of *similia similibus* was then only forming itself into shape in his own mind, moral influence was effectually directed to the drying out of morbid moral impressions. The general course of moral treatment consists in calming and soothing the mind, and in *gradually* drawing into it an entirely new train of ideas and mental associations. By degrees the intellectual powers become withdrawn from the old channels; and being employed on new objects the morbidly active faculties have time for rest and renovation. The importance of abstracting the mind from all accustomed associations and thoughts has been generally admitted; and for the opportunity to accomplish this object, it has been common in our time, to remove deranged persons from their accustomed residences, and from all association with their immediate friends. For this reason alone the patient is placed in an asylum where his personal safety and that of others can be provided for by proper restraints, and such influences may be brought to bear upon the mind as shall fill it with new ideas to the exclusion of old ones.

But it is not merely the residence of a patient within the massive walls and iron-grated windows, the bolts and bars of an asylum, surrounded by other patients more insane than himself, and the consciousness that he is a prisoner, abandoned by all who were once dear to him, that cures insanity; these accompaniments of the public asylum system, instead of being a *benefit* to the lunatic, are all in themselves *injurious*. Though many recover, it is not by these agencies that they recover. All the triumphs of homœopathy have been achieved without their influence. When his personal safety and that of others can be secured in a small circle of intelligent, discreet friends, who possess the knowledge that hospital employees are supposed to have, and the sympathy for the patient's real sufferings, which they too seldom feel; where he may be so treated that he does not know that he is a prisoner, and where his self-respect shall not be rudely touched, his dominant phantasies ridiculed, or his morbid sensibilities harshly invaded; then, under the influence of such surroundings, and the personal presence of a true-hearted and true-minded physician, fully imbued with the principles of Hahnemann, may be restored to reason many a blasted intellect, over which existing institutions have no power.

The system of treatment which confines the maniac to the cells, the fetters, and to the society of maniacs is never the best. The patient who has ever known prosperity, too intensely feels the degradation to which he is reduced. The asylum to which he is consigned is no home to him. Many are only taken thither by a course of deception, and they only discover, on their arrival at the strong castle, which they regard as a prison, that they have been betrayed by their best friends. These friends have been unwilling to exercise force openly, and now console themselves with the reflection that if, on reaching the asylum, the maniac is unwilling to remain, there are means of compulsion there which can be employed without the public exposure that would have been necessary in calling on sheriffs and policemen. The patient, on arriving at the asylum, discovers that he has been deceived by those he has known longest and has most confided in; he becomes, of course, suspicious of the officers of the institution, who are strangers to him, and hence their influence is greatly impaired. The patient, believing that he has been brought to the asylum by treachery, thinks he has a moral right to employ any artifice by means of which he may effect his escape. He is, therefore, necessarily kept only as a prisoner, closely confined, and watched as a criminal. If insane persons must be removed from their homes to a public asylum, let them be frankly told by those who have them in charge, *why* they are to be removed, and *where* they are to be placed. If then they resist, and force must be employed, let it be so; but let not the unhappy exiles from their homes be distressed by the belief

that they are the victims of a fraud practiced upon them by their dearest friends.

If we succeed in raising him mentally and spiritually we must begin by respecting him as a man. Every human being claims some degree of consideration and sympathy; and if we expect to succeed in drawing the wrecked mind from the ocean depths of despair, we must begin by seeking *points of contact* in his character as it is, by which we may gradually *bend* it out of its false direction, not attempting to break it abruptly off. The insane man, generally does not know that he is insane and inferior to others; hence the impossibility of gaining his confidence so long as you treat him with contempt. Indeed, as long as you *mentally* regard him as an inferior, you can exert no personal influence over his mind. One striking characteristic of the insane is a preternatural quickening of the perceptive powers, by which he is enabled to read, as if by intuition, the minds of persons around him; at the same time those persons generally betray by their actions their belief that he is deficient in those very powers.

The ideas of Hahnemann on the moral treatment of the insane are thus given in the *Organon*: "When the extent of *physical* disease is small and the insanity has originated in *mental* causes; if it is still kept up by them, is still recent, and has not yet made any great inroad upon the physical organism, it may be possible to overcome it entirely by moral means alone. Whether this be attempted or not, it is still necessary to employ mental agencies in the management of the patient. He must be treated 'with a show of confidence, bestowing on him friendly exhortations and friendly advice.' But we are never restricted to mental agencies alone, though Regular Medicine is compelled to rely on them exclusively. In every case it is necessary that the physician, and all employed in the management of the insane, should exercise the highest degree of discretion. 'To the furious maniac we are to oppose tranquility and unshaken firmness, free from fear; to the patient who vents his sufferings in grief and lamentation, silent pity that is expressed by the countenance and gestures; to senseless prattle, a silence *not wholly inattentive*; to disgusting and detestable demeanor and similar discourse, entire inattention. As regards the injury and damage the maniac may commit, we are merely to anticipate and prevent it, without ever expressing a word of reproach to him; every thing ought to be so ordered that punishments and the infliction of bodily suffering may be dispensed with.'" (*Organon*, § 228.)

Each patient should be allowed all the liberty consistent with safety; every effort should be made to excite in the patient's mind the sentiment of self-respect, and ambition for the good opinion of others; to draw out the sparks of social affection; to occupy his attention; to exercise his judgment in useful employment; to divert him from his

hallucinations to amusements; to conciliate and soothe him by kindness and gentleness of manners; at the same time to make him perceive the impolicy as well as folly of his erroneous conduct by the constant privations, and the prompt and decisive restraints to which he must find himself immediately subjected.

In England, Dr. Conolly has more recently attempted to carry the non-restraint system of practice to the highest perfection, at Hanwell, London; and his work, published in 1856,* gives the best view of this practice, in contrast with that which had recently prevailed in asylums generally. He says: "that the mere abolition of fetters and restraints constitutes only a part of what is called the 'non-restraint system.' Accepted in its full and true sense, it is a complete system of management of insane patients, of which the operation begins the moment a patient is admitted over the threshold of an asylum. And it is a part of the non-restraint system to remember, whatever the state and circumstances of the patient may be, that he comes to the asylum to be cured—or, if incurable, to be protected and taken care of and kept out of mischief, and tranquilized; and that the straight-waistcoat effects none of these objects. It belongs to the days of mechanical restraints, when every evil of seclusion was combined with every possible suffering incidental to the confinement of the arms and legs, and the whole body; and the patient, excited and feverish from his malady, and heated and exasperated from the previous struggle, was left to lie in a constrained and comfortless position, and to suffer thirst, and to become subjected to all the miseries of unavoidable uncleanliness. With such treatment the patient commonly became furious. All kind attentions being incompatible with such disregard and neglect of him, there was no avenue to a good understanding between him and the attendants, whom he then, and long afterwards looked upon as enemies and tormentors. In the old asylums, every arrangement was principally made for security and control; in the new, every arrangement is made for the cure of the malady, or the comfort of the patient. The great principle of the new system is to exclude all hurtful excitement from a brain already disposed to excitement. We must study to remove from an insane person every influence that can farther excite his brain, and to surround him with such as, acting soothingly upon both body and mind, may favor the brain's rest, and promote the recovery of its normal action."

Among the improvements yet to be made in the practical department of public asylums, arrangements are particularly needed for what may be called "*an individualized* treatment. None but those daily familiar with the events of asylums, can duly appreciate the

* "On the Treatment of the Insane without Mechanical Restraints."

great effects of such treatment in special cases. The physician must be able to command the services of a staff of kind and conscientious attendants trained by himself. If they are accustomed to the sight of their patients in the humiliating condition of restraint, and allowed to impose restraints whenever a patient is wayward or irritable, for every irregular action, and for every violent word, they can not be taught to treat the same patient with any show of respect, much less with any constant manifestation of humane regard."

The principal substitutes for restraint, in violent cases, suggested by late authors, consist only in short seclusion and the "padded room." The latter is regarded by Dr. Conolly as "an auxiliary without which it is questionable whether or not restraints could be entirely dispensed with in any large asylum." Its great advantage, "in all cases of high excitement, is that it renders both mechanical restraints and muscular force unnecessary for the control of the most violent patients."

"By these various appliances—some of them simply of small significance, and perhaps almost wearisome in detail, but conjoined forming a system directed to one object—the whole constitution of an asylum, and the transactions and incidents of every day are made remedial. Every thing done by every officer, and every word spoken by the sane to the insane, is in conformity to one plan, directed by a chief physician, carried out in all its details by efficient and faithful officers, and having for its sole object the happiness of the patients, the relief or cure of all the griefs and troubles of the heart, and the restoration of composure and power of the mind. These in their union, constitute the system of managing the insane without mechanical restraints."^{*}

Though the padded-room, so highly commended by Dr. Conolly, may not be in all cases a substitute for mechanical coercion, it may essentially aid in the exercise of that systematic kindness and forbearance which is the *sine qua non* to successful medical treatment of the lunatic. It at least gives essential assistance in the delirium of epileptics; in "many states of extreme exhaustion, with jactitation of the limbs occasionally occurring before death from acute mania; in some suicidal cases; and sometimes in the conduct of a patient suffering a paroxysm of acute mania." It also possesses the property of deadening sound and diminishing the disturbance of many patients by one."[†]

Personal Restraint in the treatment of the insane should be avoided, except in extraordinary cases. In some extreme cases of puerperal and other exhaustive forms of mania, and in cases in which

* Dr. Conolly on the Treatment of the Insane, p. 106

† British and For. Med. Chirurgical Review, April, 1857, p. 222.

delusion compels the patient to stand on his feet until utter exhaustion, some degree of personal restraint has been found necessary. The best mode of securing this restraint, without injury to the patient, is that devised by Dr. Wyman of the McLean Asylum, (Somerville, Mass.) It was called the *bed-strap*, and consisted of an arrangement of webbing and buckles, by which the patient could be kept in the recumbent position in bed, yet with liberty to change from side to side, effecting its object with the greatest gentleness. (*Report for 1849.*)

Influence of the Passions in Causing and Curing Insanity.—The resources of medicine are not confined to the *Materia-Medica*; and all our resources are in this day needed. In the treatment of every form of disease, it is, says Sir Astley Cooper, "The duty of the physician to support hope, preserve tranquility, and to inspire cheerfulness, even when he is doubtful of the issue." A kind expression, an unobtrusive inquiry, a word in season, betokening interest and regard, may serve to draw out the real cause of a pining malady, which has long resisted the best efforts, and may thus lead to its cure. And a noble effort of the soul may bid defiance to physical agony, and put a temporary check to the onward march of death.

If a patient submits himself to his fate without repining; if he yields to the advice of friends, and consents to all the remedial measures proposed, he generally does well. On the contrary, if he bitterly deplores his fate, is too anxious about the means of cure, and impatient when relief can not at once be obtained; we may then consider that a constitutional irritation highly unfavorable to recovery exists. In the present period of high political excitement and mental disquietude "moral therapeutics" possess a higher value than in former times. Among all classes of the people we see the effects of the various excitements of progressive civilization, of misdirected education, of commercial vicissitudes, political agitation. To these causes of physical and mental disease we must add the influence of the various passions, of which the effects of a few prominent ones may be briefly given:

Grief.—The specific effects of grief are often witnessed by physicians, when their efforts to prolong life have been unsuccessful. It lowers the action of the heart and arteries and all the physical powers; arrests the secretions, especially that of the liver, and produces a low feverish state; there is defect of animal heat, the appetite fails, the mind becomes weaker. The three worst forms of disease to which man is liable,—insanity, cancer, and fungus haematoches may arise from excessive grief. Anxiety of mind produces diseases of the chest. The nerves and muscles lose their accustomed tone and energy. Over-anxiety sometimes causes sudden death from cerebral or cardiac lesion. A clergyman who had preached at an hour when

he was in a state of great anxiety to return home to his wife, who was dangerously ill, fell dead in the pulpit, immediately after he had finished the services. Diseases of the heart were little attended to before the French revolution; but the trying scenes of that period called forth such a multitude of cases of that disease that a volume was soon written on the subject by Corvisart, who ultimately died of the same disease. The state of the stomach is modified by every impression on the mind; and thus arise dyspepsia, haemorrhoids, hypochondriasis, jaundice, &c.

Grief.—Consequences of :* *Remedies.*

Ignatia.—Silent concealed grief, combined with mortification, suppressed vexation; silent grief, caused by misplaced affections or losses, and constantly preying upon the mind. Spasmodic fits, caused by grief or mortification.

Also when vomiting, sickness of the stomach, headache and giddiness.

Phosphoric-acid, when Ignatia fails. The patient is very quiet, taciturn, has a slow fever, great exhaustion, the patient scarcely able to speak.

Phosphoric-acid.—The patient is wasting away, treats others contemptuously, does not wish to speak, perspires much in the morning, is sleepy and stupid.

Hyoscyamus.—The patient is jealous, violent in his motions, quarrelsome, delirious.

Lachesis.—He talks much, changes the subject of conversation abruptly.

Platinum.—He treats with contempt persons previously esteemed; confesses that he is tempted to kill them. In females menstruation is excited by fright, grief, or fear.

Coccus.—Headache and nervousness following grief, loss of sleep from watching over sick friends.

Sulphur.—Entire sleeplessness, continuing for many nights.

Derangement of Intellect from Mortification, Belladonna, Phosphoric-acid after Bell. fails.

Hyoscyamus.—Sleeplessness from home-sickness; hot flushed face.

Capricum, when Hyoscyamus fails.

Merc-vivus.—The patient is very weak, trembles, is uneasy, agitated at night, is chilly, perspires during the night, quarrelsome, obstinate, sensitive, manifesting great anxiety.

Staphysagria.—Protracted effects of grief; the patient is irritable, cross, uneasy, fearful, dejected, anticipating danger, dreads the future, frets and grieves constantly, is sleepy during the day, restless at night, perspires night and day, loses the hair, the voice becomes feeble.

* Hering.

Fear exerts a stronger influence over the powers of the body than any other emotion. When a patient declares that he *cannot* recover, this prepossession does much to deprive the constitution of the powers necessary to restore the body to health. A man came to Sir A. Cooper with a stone in the bladder; the bladder was examined by a sound and the stone was touched. The patient was unwilling to believe it, as he said he could never endure the pain of an operation for extracting it. The thought of it so weighed down his mental powers that he returned to the country, and in a few days died. (*Surgical Lectures*.)

Under the influence of fear, the whole muscular system, involuntary as well as voluntary, is relaxed and unstrung; the skin is chilly and damp; the body is unable to originate its accustomed amount of heat; the circulation is hurried and irregular; and the blood is unequally distributed; the breathing is short and rapid, or takes place in intermitted deep-drawn efforts; the nervous system of sensation is, for the time, in a state of exquisite and over-wrought tension, but soon to be followed by one of relaxation and exhaustion. Thus all the effects of fear or terror in a high degree are essentially depressing and enervating. When the emotion is lighter in degree the effects are of the same general character. Cases are given in which serious and fatal diseases have been developed by merely *talking* of them in a way to make a well person fully believe he was becoming dangerously ill. Fear renders the system more susceptible to the morbific influence of contagious or epidemic fevers; it produces relaxation of the sphincters, causing enuresis, diarrhoea, dysentery, abortion. Cholera has more frequently been caused by fear than any other disease. The only counteracting influences are confidence and hope. Under their influence physicians meet the pestilence in its own domain, among sick and dying, and hold up the *Aegis* of Minerva to shield a terrified people from its destroying powers.

Treatment of Symptoms caused by Fear.—To children, when excessively timorous, give Acon. in the evening and Bell. in the morning.

For diarrhoea, caused by fear, Opium or Veratrum.

Body very hot and limbs cold. Pulsatilla.

Stupefaction, difficulty of swallowing, convulsions, laughing when asleep, starting, constant apprehension, desire to escape. *Hyoscyamus*.

Agreeable surprise, pleasurable sensations, with great excitement, trembling, fainting, &c. Coffea.

Fright, sudden noise, &c. Opium immediately after the fright.

If half an hour has elapsed, Acon., returning to Opium, if not relieved.

Fright with terror. Opium.

consequence, labors with inordinate and irregular power to propel it with redoubled force. Hence it is that, under its violent influence, a blood vessel may give way in some part, or even "the golden bowl" may itself be "broken at the fountain." In this way many noted persons have died suddenly.

A gentleman, while engaged in entertaining a number of his friends, stamped with his foot in anger at one of his servants. The excitement immediately brought on an attack of haemoptysis, and which ultimately resulted in his death. John Hunter ascribed the commencement of his heart-disease to a fit of passion.

Broussais and other physiologists, have asserted that rage is capable of generating a most virulent poison, especially in the saliva. They refer to numerous instances in which wounds from enraged animals have been followed by effects that could only be accounted for by supposing some virus communicated. (*Med. Chirur. Rev.*, Vol. 47, p. 369).

The influence of mental emotions on the body in the course and progress of disease meets us at every step in practice. The fretful, irritable child suffers more with croup or pertussis than one of milder disposition. Children are considered more difficult to treat since they are less able to explain their feelings; but, when we consider the depressing powers of the stronger emotions and passions of adult life, we acknowledge that it is in persons of mature age, engaged in combatting the perilous scenes of civilized life, that the most perplexing problems of practice arise. In diseases of the respiration impatience and feverish fretfulness always increase the patient's sufferings. Instead of quiet resignation we see him restless, boisterously moving from one position to another; breathing deeply at one moment and expelling the air from the lungs by loud groans and murmurings at the next. The progress of phthisis is said to be retarded by sustained equanimity and resignation. In some cases we see a peculiar calmness and mental tranquility, which disarms the disease of much of that irritable feverishness that so rapidly wears out life. In impatient persons every thing goes forward unsatisfactorily; every motion gives pain, every thought is one of vexation, every sound is a discord.

TREATMENT OF SYMPTOMS CAUSED BY ANGER.—*Nux-vomica*.—Violent tempered persons who feel unwell after being in a passion.

Staphysagria.—Persons not of sanguine temperament. Anger, with just indignation.

Staphysagria.—Vexation, accompanied by just and violent indignation, and abhorrence of the thing that has occurred; he rejects every thing that is offered him.

Platinum.—Derangement of mind from anger.

Chamomilla.—Violent rage in children, causing convulsions.

Arnica.—Children violently excited, weeping, with frequent attacks of cough.

Ignatia.—Grief or shame, the consequence of vexation

Bryonia.—The same, followed by cold or chills; the patient is irritable.

Colocynth.—Vexation, accompanied with pain in the bowels, increased by taking food.

Chamomilla.—Vexation, attended with violent fits of anger and great heat, cough, palpitation of the heart, asthma, spasms in the chest, threatening suffocation; derangement of digestion, manifested by bitter taste, cutting pains in the bowels, vomiting of bile, headache, fever with heat and thirst, redness of the face and eyes, agitation, bilious fever or jaundice.

Pulsatilla.—In persons of a naturally mild disposition, where *Colocynth* or *Chamomilla* have failed.

INFLUENCE OF THE MIND ON THE BODY.—Plato says, in his *Char-mides*, that "all diseases of the body proceed from the soul." The expression of the countenance is *mind visible*. Bad news weakens the action of the heart. Disgust oppresses the lungs and partially suspends all the functions of the system. An emotion of shame flushes the face; fear blanches it; joy illumines it, and an instant thrill electrifies a million of nerves. Surprise hurries the pulse, delirium infuses giant energy. Violent emotion sometimes causes instant death.

The influence of depressing mental emotions is too often overlooked. "If a man dies," says M. Revillé-Parise, of the Paris Academy of Medicine, "we open his body, rummage among the viscera, and scrutinize most narrowly all the organs and tissues in the hope of discovering lesions of one sort or another; there is not a small vessel, membrane, cavity, or follicle which is not examined; nothing escapes the eyes of the anatomist." But one thing beyond his eye-sight does escape him. "He is looking at merely organic effects, forgetting all the while that he must mount higher to discover their causes. These organic alterations are observed, perhaps, in the body of a person who has suffered deeply from mental distress and anxiety; these have been the energetic causes of his decay; but they cannot be studied in the dissecting-room. Many physicians of extensive experience are destitute of the ability of searching out and understanding the *moral* causes of disease. They cannot read the *Book of the Heart*; and yet it is in this book that are inscribed, day by day, and hour by hour, all the griefs, and all the miseries, and all the vanities, and all the fears, and all the joys, and all the hopes of man, and in which will be found the most active and incessant principle of the frightful series of organic changes which constitute pathology."

Monomaniacs may sometimes be cured, however, by indulging them

in their delusions, and encouraging them in the hope of being able to remove the cause. The late Dr. George McLellan once had a case in point: a highly intelligent merchant was firmly possessed with the idea that there was a living eel in his stomach; and he so tormented himself with the delusion that he became seriously ill, and was obliged to abandon business. He had employed many eminent physicians who all ridiculed his delusion, and endeavored to convince him of its absurdity, but all to no effect; the idea continued firmly fixed, and his general health continued to suffer, when as a last resort, and in disgust at the ignorance and obstinacy of all physicians, he called on Dr. McLellan, who, on investigating the case, decided to indulge the patient in his delusion; he accordingly assured him that he had a monstrous living eel in his stomach, but that he could give him a medicine which would destroy the animal, and carry it off by way of the bowels. Accordingly, a long prescription was written, amounting to a powerful drastic purgative, and the patient directed to take it. At its operation, the attendant was advised to slip a mutilated eel into the vessel, and convince the invalid that it had passed from him. The stratagem succeeded admirably, and the man was directly restored to health, mental and bodily.

Frank mentions the case of an individual "who did not wish to urinate for fear of producing a new deluge; he was told that if he persisted in his sad resolution, a fire would occur and burn up the universe. He hastened to urinate, and his delirium vanished."

Another monomaniac believed himself damned; one of his friends, habited as an angel, entered his chamber during his sleep, holding in one hand a flambeau, and in the other a glistening sword. He announced to him in behalf of God the pardon of his crimes, and the patient was restored to health. "Another monomaniac imagined there were rabbit-burrows in his head. To cure this illusion, they made a crucial incision in his scalp, and showed him bloody rabbits, which they said had retired from the wound."

Much, however, must depend upon the peculiar circumstances attending each particular case, in applying our moral treatment; but as a general rule, uniform kindness, respectful treatment, proper discipline, and a perseverance in all those means which tend to direct the mind into new channels, as games, music, gymnastic exercises, mechanical or agricultural labor, exhibitions, &c., will enhance very materially our success in the treatment of this class of maladies.

MEDICAL TREATMENT.—In entering upon the medical treatment of a case of insanity it is necessary: 1. To take notice of all the symptoms presented in the case before the mental phenomena attracted attention. We need the previous history of the patient.

2. To compare these symptoms with the physical symptoms which

remain, though at present nearly overshadowed by the mental ones, which alone attract the attention of the friends.

3. To note, with minute accuracy, all the mental manifestations *in detail*; and,

4. To compare the totality of the symptoms of the entire case with those of such remedies as can come nearest to furnishing a *similar train of symptoms*.

Thus, Aconite seldom effects a rapid and permanent cure when the temper of the patient is quiet and even; or Nux-vomica, when the disposition is mild and phlegmatic; or Pulsatilla, when it is lively, serene, or obstinate; or Ignatia, when the mind is unchangeable and little susceptible of either fear or grief.

— Almost all affections of the mind and disposition are nothing more than diseases of the body, in which the changes of the moral faculties (more or less rapidly) become predominant over all the other symptoms, which are diminishing; they finish by assuming the character of a partial disease and almost of a local affection.

Diseases of the Mind and Temper, when serious and persistent, are almost always associated with some psoric or constitutional dyscrasia, and can only be effectually cured by antipsoric remedies. But in all other diseases the mind is more or less involved; and none of them are successfully treated by remedies that do not cover all the mental as well as physical symptoms. Sometimes, in a psoric constitution, the mind is calm and gentle until the painful part of the affection is cured; and then the patient becomes ungrateful, obdurate, or malicious, as he had formerly been before the so-called bodily disease showed itself. If, in such cases, curing the bodily disease develops another phase of the inveterate psora, we must continue our treatment until it is driven from the mind as well as the body. Fortunately, we have, not only numerous remedies that act directly on the "Mind and Disposition," in these cases, but we have none that do not so act when mental symptoms exist to call out their powers. In every disease the mental symptoms must be provided for.

Remedies.—INSANITY.—*Acon.*, *Agar.*, *Ant.-Crud.*, *Arsen.*, *Bell.*, *Cann.*, *Canthar.*, *Caust.*, *Coccul.*, *Con.*, *Cupr.*, *Dulo.*, *Hyoscyam.*, *Opium*, *Sec.-cornu.*, *Stram.*, *Sulph.*, *Veratr.*, *Zinc.*

Insanity, with haughtiness: *Hyoscy.*, *Stram.*, *Veratr.*

" Mirthful: *Crocus*, *Ignat.*, *Stram.*

" Mild: *Croc.*, *Veratr.*

" Religious: *Veratr.*, *Stramonium*, *Platinum*.

" Talkative: *Stram.*

" Furious: *Hyoscy.*, *Stram.*

The remedies which have perhaps been most frequently successful in the cure of insanity are: *Opium*, *Belladonna*, *Nux-vomica*, *Acon-*

ite, Ignatia, Hyoscyamus, Stramonium, Pulsatilla, Veratram, Platina, Conium, Helleborus, Aurum, and Aurum-muriaticum.

Opium is suitable in all cases of *dementia*, attended with sopor, stupefaction of the senses; general loss of mind and sensation; indifference to pain or pleasure; strange visions; laborious respiration; constipation, with bloating of the abdomen; face pale, or red, or brownish; diminished temperature of the skin; full and slow pulse; spasmodic movements and trembling of the limbs; rage with fixed ideas; lethargic drowsiness with loss of consciousness; mania, with fantastical or fixed ideas, which induce a belief in the patient that he is from home; frightful visions, of mice, scorpions, &c.; convulsive movements and trembling of the limbs, anguish, fury; inability to go to sleep, though there exists great sleepiness; constipation with meteorism; congestion of the head with redness of the face, &c. Delirium tremens.

Aconite.—When there are frequent and full pulse, hot and dry skin, thirst, and other febrile symptoms, with congestion of blood to the head, and a general exaltation of the muscular and mental powers, *Aconite* may be employed to remove this condition.

Nux-vomica is suitable for suicidal monomania, attended with great anguish, and desire to go from place to place; also in nervous hypochondria arising from derangement of the stomach and liver; also mental derangement arising from mortification; from excessive study; from suppressed haemorrhoids. It is sometimes useful to remove the constipation which is so frequently present in insanity; also watery diarrhoea.

Nux-vomica is generally the best remedy when insanity follows the excessive use of coffee, wine or spirits, a night debauch, or excessive mental labor; when menstruation is too frequent; the stomach deranged; the temper irritable; sad and desponding mood, he is restless, feels anguish and desires to destroy himself; or is apprehensive of death; loss of consciousness, raving, frightful visions, sleeplessness, unreasonable answers and actions; paleness and bloatedness, redness and heat of the face, with congestion of the head; stammering, starting and trembling of the limbs, bewilderment and heaviness of the head; fullness and inertia of the abdomen; pressure, heaviness, and squeezing in the pit of stomach, epigastrium and hypochondria; retching or vomiting of ingesta, or of bilious matter; sleeplessness, with starts; is excessively sensitive to noise, odors, &c., also to light and music; he moans and scolds during the pains; is inconsolable on account of trifles; is offended at little faults or neglects; is disposed to censure and quarrel.

Hyoscyamus.—This drug is capable of producing a species of mental derangement characterized by a kind of stupefaction, as observed by many authors cited by Hahnemann. It was this form of mental

disease that was cured with this plant by Fothergill, Störck, Hellwick and Ofterdinger. Hahnemann says: "A man who became deranged through jealousy, was for a long time tormented by Mayer Abramson with remedies that produced no effect on him, when under the name of a *soporific* he one day administered *Hyoscyamus* which cured him speedily. Had he known that this plant excites *jealousy* and *madness* in persons who are in health, and had he been acquainted with the homœopathic law, (the only natural basis of therapeutics), he would have been able to select this remedy at the beginning of his experiments.

Symptoms.—Anxiety and fear; is apprehensive of being betrayed, poisoned, sold or bitten by animals. Loquacious, jealous; phrenzy, rage; thinks he is possessed by evil spirits; throws off his clothes; gesticulates, makes grimaces, taps upon his head and nose, makes foolish and unmeaning jestures. The mania comes on in paroxysms, alternately with epileptic fits; or the patient is sleepless; there is continued delirium, great anguish and fear, especially at night; a desire to run away; visions of dead persons; fury; raving about business matters; trembling of the limbs.

Belladonna.—Furious and violent derangement, or merry and silly craziness; face red and hot; expression gay, or ferocious with fixed look; eyes brilliant, pupils dilated; head hot; spasms; startings; sanguine choleric temperament; impulsive nervous system; derangement after suppression of erysipelas, after meningitis, typhus or apoplexy. Despondent and wishes to die; moaning and crying; anxious, restless, cannot remain quiet in one place. Vertigo; headache from congestion of blood to the head; sleeplessness with great distress, agitation, unquietude uneasiness and anguish; frightful dreams, starting suddenly from sleep; spasms or stiffness of the limbs; constant inclination to change the position of the limbs; visions, thirst, general sensation of uneasiness and discontent; timidity, disposition to cry or hide himself: he is distrustful and apprehensive of imaginary things, is excessively sensitive. Furious mania; rage, or sadness, despair, unconsciousness, frightful visions of spectres, devils, soldiers, war, bulls, with impulse to run away, or to hide; mistrust, timidity, fear of death or quarrelsomeness, disposition to spit, strike, bite, and tear everything, or to pull out the teeth; cries, barking, and conversing with the dead; apprehension and fear of death, preference for solitude, wishes to be alone; repugnance to conversation; laconic style of speech; apathy, ill humor, irascibility and moroseness; he is irritable; howls and screams, is quarrelsome, breaks out in a rage with convulsions and gritting of the teeth; staring look; he does not recognize his own relations; tears, bites, spits, strikes about. He is fitful; excessively mirthful, frantic; he sings, whistles, smiles or laughs; he sees visions of

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beautiful or frightful images, ghosts, black dogs ; is delirious, raving expresses himself in moanings, lamentations, and prayers ; ridiculous buffoonery ; haggard eyes, with fixed and furious look ; puffed face strong desire to gaze at the sun, or a fire ; slaver and froth at mouth ; stammering ; burning thirst or repugnance to drink, with dysphagia ; jerks and starts ; trembling of the limbs and especially the hands ; sleeplessness with agitation, &c.

Pathological Anatomy.—Congestion of the vessels of the brain, injection of the vessels of the dura mater, pia mater, and substance of the brain with black blood.

Clinical Cases.—Dr. Norton says, a case of mania, caused by unrequited love, was cured with Ignatia and Belladonna. A case of puerperal mania was cured with Belladonna alone. In this case there was great excitement; also jealousy and quarrelsome mood; the lochia and milk were suppressed; the patient had a destructive tendency, attempted to strike; was spitting at others. It may be remarked that nearly all cases of puerperal mania are characterized by jealousy which shows the uterine source of the disease.

A third case of mania, attributed to sunstroke, was also cured by Belladonna only. The symptoms were : fear, dread, weeping, restlessness, talking nonsense, making grimaces.

A fourth case of mania was cured with Belladonna only, in four days, after having been long under allopathic treatment. Symptoms : crying, ringing, spitting, staring eyes, fearful oaths and imprecations, delusions, foaming at the mouth, difficult deglutition. (See *Dr. Belluomini's Monograph on Belladonna*.)

Agaricus-muscarius.—Delirium, stupor, blindness, convulsions, muscular debility, paralysis, and drowsiness. Gastro-intestinal irritation, nausea, vomiting, purging, and abdominal pain. Depression of the vascular system; pulse small and feeble, extremities cold, body covered with a cold sweat. In some, local irritation alone is seen; in others narcotism. (*Pereira. Mater. Med.*)

Dr. Black* says: "This, like others of the poisonous fungi, exercises a violent action on the brain and spinal cord; it produces excess of sensitiveness to all external impressions; with weakness, twitching of the muscles, irregular convulsive movements; desire to dance; so resembling the action of Belladonna, Stramonium, Cuprum-aceticum and Lachesis. It excites great sensibility of the skin (in this respects the opposite of Plumbum, which causes *cutaneous anaesthesia*), that the slightest pressure produces intense pain; and a very slight blow causes ecchymosis, resembling in the former symptom *Silicea* and in the latter *Conium* and *Lachesis*.

* *Brit. Jour. Homœop.*, Vol. V.

Tartar-emetic has been recommended by Dr. Fleming when there is full hard pulse and hot dry skin, with maniacal excitement. He proposes it in doses that shall produce a general relaxation of the system, free perspiration, soft pulse, and clear skin. He also advises it in puerperal insanity. We do not approve of his use of the remedy in such doses as produce only *antipathic* effects; but we regard it as homoeopathic to many of the physical manifestations accompanying mental derangement: for these its use is highly important. But the crude doses of this drug or any other, though they may occasionally afford temporary relief by creating revulsion to healthy parts, always result in reactions which aggravate the original malady. We should never be misled by apparent benefits arising from the primary action of remedies. The reaction of the recuperative forces against the primary action of all crude drugs, always tends to the production of an *opposite and permanent* group of symptoms; and the perturbations to healthy structures, caused by these primary actions, must necessarily complicate, to a serious extent, any disease already present." (*New Materia Medica*. p. 419.)

Aconite.—Fear, and presentiment of approaching death; impulse to run away from the house, or from the bed; gloominess, taciturnity, and laconic style in speaking; paroxysms of anguish, convulsions, cold perspiration, congestion of blood in the chest or head, palpitation of the heart, and praecordial anxiety; delirium, with laughter and tears alternately.

Hahnemann shows that, although Aconite is the true remedy for acute insanity in a febrile or inflammatory form, it can only be successful in cases in which the characteristic symptoms of Aconite constitute the *whole case*. In other cases it only removes its own part of the disease, leaving the patient only in that state of ill-health in which the acute attack found him. Thus:

A patient who previously manifested some dyscratic bodily disease, without *remarkable* mental peculiarities, is suddenly thrown into strong mental excitement by overpowering emotions, as fear, grief, intoxication, &c.; and is at once pronounced by the friends *insane*. In such cases, Aconite, Belladonna, Stramonium, Hyoscyamus, or Mercury may remove the transient but violent furor, and bring back the power to its former latent condition. In this condition the friends receive the patient from the asylum and regard him as *cured*. Though really the real malady has only changed its base of operations, and is *not cured*, even though he may have taken homoeopathic specifics for the state of mental excitement. A perfect cure can only be effected by the persistent use of antipsorics, which cover both the mental and the physical symptoms." (*Organon*, § 121.)

Cure by Dr. Lister.—An idiotic youth, aged 17, had been pro-

nounced incurable at the Royal Prussian Lunatic Asylum. Had in childhood been well; but several years ago an eruptive disease on the head was suppressed by an external application. He then became sleepless; then saw frightful spectra; became delirious with paroxysms of rage and trials to escape. Finally he became taciturn, peevish, and lastly, completely apathetic, so that he was unconscious of his natural wants. Sulphur being indicated by the cause and Belladonna by the symptoms, I gave both medicines (30 in dilution) in alternation, six pellets, in a cup full of water, a spoonful morning and evening for four days. On the eighth day he showed improvement, in four weeks gave occasionally a rational answer; in three months he talked coherently, wrote letters to his friends and discovered mistakes in the accounts of an employée. He was completely restored, after all other treatment had failed.

SUICIDAL MONOMANIA.—Dr. J. P. Jousset,* reviews the remedies, which, when tried on a healthy subject, produced phenomena resembling those seen in suicidal monomania.

1. *Anxious Suicide*.—Anxious desire for death. Arsenicum, Aurum, Bell., Carbo.-veg., Hepar.-sul., Merc., Nux-vom., Pulsatilla, Rhus-tox., Silicea.

Arsenicum, Nux-vom. and Pulsatilla produce, anxiety with palpitations or constrictions of the heart. Bell. and Mercur. develop a longing for death, accompanied by hysterical phenomena and involuntary crying, which is aggravated at the monthly periods more particularly:

Arsenicum.—Suicidal and even homicidal monomania. Hahnemann says: The prover is tormented by a fear of not being able to refrain from committing murder; the anxiety is habitually accompanied by heats, tremors of the limbs, palpitations of the heart, oppression; it is generally manifested at night and after meals.

ON THE MORAL TREATMENT OF RELIGIOUS MELANCHOLY.—The following remarks are made by M. Frank: "The physician should endeavor to substitute a new passion in the place of the dominant one; for example, hope for despair, mildness for rage, &c. He should carefully prohibit monomaniacs from listening to mystical lecturers, or conversations, and all religious discussions. In the mean time, when the delirium consists in the fear of the judgments of God, or want of confidence in his mercy, we can sometimes cure the patient by instructing him in the true principles of religion. But it is not necessary to insist, if the melancholic, instead of relishing the solid reasons which we give him, finds in these conversations a new aliment to his delirium. The consolations of religion are always useful to persons whom

* *Medicine Practique par J. P. Frank.*

reverses of fortune, domestic chagrin, unfortunate love, &c., have plunged into a melancholic state. We have seen a case of melancholia with propensity to commit suicide, fixed by excess of study, and of masturbation; the patient suffered moreover much from hypochondria. Voyages, distractions, and rigid diet produced only momentary relief. The consolations of religion, a rigorous observance of continence and of other Christian virtues gradually operated a cure. We have re-examined this patient at the end of six years; he enjoys perfect health, and when a sad idea comes to darken his imagination, the most simple practice of religion suffices to restore his mind to calmness and serenity. Religion is capable of operating similar cures daily: it acts upon the heart of man with much more force than all the arguments of philosophy. But its happy influence is unknown to the sceptical; and it can hardly be employed on those who need to be argued into a belief in the truths of Christianity, inasmuch as such reasons may confuse the already bewildered mind of the lunatic. To such we can only hold out such consolations as virtue and true philosophy afford. The study of the natural sciences, especially such as cultivate the observing faculties and make small draft on the thinking-powers are always useful in such as can be interested in them." Many cases of religious insanity are successfully treated by moral measures alone; but there is nearly always present some degree of physical disease; and we always have it in our power to prescribe remedies which have power over the physical as well as the mental symptoms. In every case, therefore, some one or more of these remedies should be tried. The following are supposed to deserve special attention: *Platinum, Sepia, Aurum, Pulsatilla, Lycopodium, Belladonna.*

In selecting a remedy, the principal difficulty is in the ascertaining precisely the seat and source of the melancholy, the corporeal malady which in most cases commenced long anterior to the mental affection. Hence the mere covering of the mental symptoms is not enough for the cure. It is necessary not only to treat skilfully the *melancholy* which gives the prominent feature of the case, but also all physical diseases that happen to have preceded, or to exist with it. But the greatest obstacles to the cure of religious melancholy arise in the patient's mental surroundings and his social position. The physician who does not in himself combine the wisdom of the physiologist, psychologist, philosopher, as well as the theologian, can neither exert the true healing influence upon his patient, nor counteract the injurious influences of indiscreet friends or incompetent clergymen.

Platina.—Ravings respecting past events, with singing, laughing, weeping, dancing, grimaces and gesticulations; obstinacy or irascibility and quarrelsomeness, vanity, with disposition to reproach

others with their defects; contempt for other persons, with inordinate self-esteem; increased sexual desire; constipation and inertia in the abdomen; excessive anguish and depression of spirits, with palpitation of the heart, timidity and great dread of death; frightful visions, with fear, fixed ideas which lead to a belief that all persons are demons, trembling of the hands and feet; anguish of the heart; absence of mind; dread of death; furor uterinus; constipation; small and feeble pulse.

Dr. Gross* gives a remarkable case cured by this remedy. An unmarried lady of sixty years, in the Alpine Valley of Algau, brought up in wealth, but educated to active industry and the forms of religion, became chlorotic at the age of eighteen; menses too early, profuse, painful; had headache, toothache, pains in stomach and abdomen; constipation for years, weakness of the back, weariness of arms, legs, chilliness, expecting death; leaving off work made her worse. She then became low-spirited, weeping, anxiety, nausea, distention of the abdomen; trembling of lower limbs, leading her to seek relief in the open air; thus excited, she could neither sit nor lie; slept only three or four hours per night; forced to run about much among the people, though repugnance to people remained; before the menstrual periods *globus hystericus*; at the age of thirty-two she became *enciente*; her child soon died. She became taciturn, solitary, devotional. At the age of forty-eight, when the catamenia had been absent for months, followed by leucorrhœa, she confined herself to her room. For twelve years she remained in it. Spent her time in deep meditation, or praying aloud, complaining, weeping, rejecting cooked food. She took no notice of anything; but at night ran about her room without object. A physician bled her, and rubbed croton oil on the stomach. She confessed to the priest that she suffered unspeakable pangs of conscience for her former error, believed she had incurred the penalty of damnation. "The priest increased her terrors and demanded of her that she should be more devotional and more benevolent. She became so more and more; and, having lost all hope, she approached nearer and nearer to absolute despair. In the still night-hours she bemoaned her misery to the dumb walls of her room, praying aloud, wringing her hands, and beseeching that she might be delivered from the hell of her conscience." Twice during these years she attempted self-destruction; once by leaping from the window and running toward the river, and next day by attempting to hang herself upon the iron grating of the window. Still she feared death, and did not like to hear allusions to it. In this state treatment was commenced by Dr. Gross. In consideration of "the anamnesis, the hysteria with which she had

* Homœopath. Vierteljahrsschrift, Vol. IX., part 4.

grown up; the atony of the uterine system, and torpor of the vegetative sphere, the trembling convulsively from weakness; the weakness, almost paralysis; her being always cold, though the open air did good, rest intolerable; there was no vascular excitement, as during her manifold nervous attacks she was always pale and shivery; all of these symptoms indicated *Platina*."

Nov. 30, 1855, Platina 6 (decimal,) a dose given every sixth day. She was ordered to be treated with affectionate forbearance; allusions to death to be avoided, and injudicious efforts at religious teaching prohibited.

Dec. 20. She no longer prayed at night, seemed to sleep more calmly; was less indifferent to what transpired around her; she had improved in other respects. January 4th. She dressed herself; from January 14th she took Platinum 6, one dose a week. It was only towards the end of January that she began to speak. Early in March she is completely cured of her melancholy, remembered what she had done, her profuse and unjustifiable alms-giving, with the many masses at the expense to her family of a thaler each.

Further Symptoms of Platina.—Fear of devils in pursuit, with calling for help. "Inclination to sit retired in a corner without speaking. Want of interest, absence of mind, and short, broken answers. Great anxiety of mind, as if death was approaching, with great fear of it."

Aurum.—Corresponds to religious melancholy, mortification and sorrow for having done wrong; grief caused by shame; sorrow and depression, with desire for solitude; fear that he has lost the love and esteem of others; with great grief and weeping; religious anxieties, with weeping and praying; anthropophobia and pusillanimity.

Hahnemann says he "cured by means of gold, several cases of melancholy in persons who earnestly thought of killing themselves. They took in all about the three-hundredth or nine-hundredth part of a grain of gold. I have also cured several other important affections, which will be found enumerated among the symptoms of gold." (*Chronic Diseases*, Vol. I.) A further experiment showed him the efficacy of still higher attenuations, and convinced him that the "ten-thousandth part of a grain of gold will manifest a most powerful curative action, especially in cancer of the palate and nasal bones, consequent upon the abuse of the acidulated preparations of Mercury." According to his experience the power of gold was still farther increased by farther trituration and dilution; and he at last gave "only the smallest part of a grain of the decillionth potency." He considered Aurum as especially useful in the following affections:

"Hypochondriasis; melancholy; loathing of life; disposition to suicide; *rush of blood to the head*; cancer of the palate bones and nasal bones; obscuration of sight, by black spots hovering before the

eyes; toothache from rush of blood to the head, with heat in the head; inguinal hernia; induration of the testes of long standing; prolapsus and induration of the uterus; rush of blood to the chest; falling down unconsciously, with the face becoming blue; attack of suffocation, with severe constrictive dyspnoea; injuries inflicted by abuse of quicksilver; pains in the bones at night; nodosities of the gout."

Great anxiety, proceeding to thoughts of suicide; with spasmodic constriction of the abdomen. Hermel says, "Aurum has cured maniacal suicide." (p. 23.)

Aurum-muriaticum.—For the treatment of suicidal monomania, accompanied with extreme depression of spirits, unrefreshing sleep from frightful dreams, dread of some impending calamity, loss of ambition and energy, diminution of virile strength and a constant disposition to dwell upon imaginary ailments, *Muriate of Gold* is a remedy worthy of the very highest consideration. Indeed, in cases of this description, no other medicines can bear any comparison with it.

INSANITY PRODUCED BY ALCOHOLIC DRINKS.—OINOMANIA.—The "moral perversion under which many persons labor who are given up to ineptiety, disposes some to look upon it as a form of insanity rather than a vicious habit. The change of character often manifest; the periodical abandonment of excessive drinking, till reaching a full debauch; the penitence and promises afterwards; the craftiness in stealing away from friends at these periods of self-indulgence; the ultimate loss of self-respect in some, and disregard of duties and responsibilities of life in all; the maintaining of an *irresistible impulse* to drink to complete gratification, and when arrested in the midst of a debauch to return to complete it. All these are by some placed to the credit of mental disease, and the destructive vice of intemperance is thus sheltered, and in some persons excused. Unfortunately, not only in the medical profession, but in the pulpit, we have advocates for the recognition of this vice, in some of its phases, as belonging to some of the forms of insanity." The term *Oinomania* has been applied to an "irresistible impulse to drink to drunkenness, in disregard to consequences or character."* It is only a respectable name, under which this vice seeks a refuge from moral responsibility, and claims the sympathy and indulgence of society in the gratification of an excessive appetite, self-induced. Some give way to these paroxysms of intemperance, claiming that the appetite becomes too powerful for resistance, others under some slight trouble because somebody has slighted, or wounded, or wronged them; or because they have been in some way disappointed; or because the world or society have failed to appreciate them, or because they have been weary of life.

* Dr. Gray, N. Y. State Lunatic Asylum Report of 1860.

We look upon each of these cases as the voluntary abandonment of self to appetite as progressive drunkenness, producing what might be well anticipated by vicious self-indulgence, namely, the loss of self-control, and the gradual but sure degradation, and final demoralization of the individual. There can be no doubt that intemperance produces insanity; but this temporary form of it should never be encouraged by admitting that it is in any degree excusable. True insanity is not characterized by "an irresistible impulse to self-indulgence, disregard of consequences, and general demoralization;" on the contrary, "insanity," says Dr. Gray, "is an immolation of self. An irresistible tendency exists to thoughts, feelings and actions at variance with the demands of the appetite, and the course of life is anything but promotive of self-gratification. In insanity there is but an apparent and temporary demoralization, induced by beclouding of the mind in its knowledge of the relations of things, and the consequent loss, more or less complete, of the abstract ideas of right or wrong. In insanity, the irresistible tendency has a motive or purpose in view above the simple gratification of appetite; and here disregard of consequences is the result of an absorbing active delirium, or a conviction that the wrong is, under the circumstances, right. We do not desire to withdraw sympathy from the unfortunates who have fallen under intemperance, but merely to disavow the theory that it is a form of insanity."

Moral and Physical Effects of Intemperance.—M. Morel says: "One class of men arrive, at length, by a series of well-marked lesions, physical and intellectual, at general paralysis." Another class, although profoundly affected, as regards the innervation, remain stationary at a point of invalidism, leading a miserable existence, characterized physically by a special condition of cachexia and marasmus, morally by a manifestation of the worst tendencies and the lowest brutishness.* In these melancholy cases we see displayed the capacity of this potent agent in causing *degeneration* of all the tissues, including the brain and nerves; even when it is not carried so far, similar symptoms are conspicuous: "The hands tremble, especially in the morning; at a later period the tremors continue through the day, being increased by slight exertion, and only relieved by alcoholic stimulants. There is dimness of sight, as if a veil were suddenly passed before the eyes; the tongue is tremulous and speech is indistinct; the patient is troubled with frightful dreams; sensation of insects creeping over the skin; tremors and shuffling gait when walking; diminished muscular power in the lower limbs, finally, in every part; diminished sensibility of the skin; vertigo, staggering; hallucinations

* On the Physical, Intellectual, and Moral Degenerations of the Human Race, p. 113

ple of the human intellect, which comprehends the laws that govern the universe and our own mysterious being, instead of being blotted out in darkness, is transformed ‘into the wild architect of a world distorted and ideal, peopled with fiends, such as perverted mind alone can conceive, and fraught with sufferings and agonies for which breathing nature furnishes no type nor parallel.’” *Treatment*, see Delirium Tremens.

GENUS III.—ALUSIA.—HALLUCINATIONS.

1. Alusia Elatio. Sentimentalism. Mental Extravagance.
2. A. Hypochondriasis. Low spiritedness.
3. A. Hallucinations. Illusions.

Dr. D'Boismont gives the following classification:

1. *Hallucinations which co-exist with a sound state of mind.* Facts are adduced which serve to prove that the reproduction of cerebral images may take place without deranging the intellect; and these serve to explain the hallucinations of those illustrious men who have been charged with insanity.

2. *Simple Hallucinations associated with a greater or less amount of mental derangement.* The sufferers are convinced that they see, hear, smell, and taste or touch things imperceptible to others. It is remarkable that these false impressions may exist, even where the organs of some of the senses are defective. Thus the Blind will say that they have seen angels and devils; and the Deaf repeat conversations which they profess to have overheard, and so on.

3. *Hallucinations associated with another affection of the senses,* to which the name of Illusions is given. Its objects exist, but they produce impressions different from the reality.

4. Hallucinations combined with monomania.
5. Hallucinations that occur in delirium tremens.
6. Those associated with catalepsy, epilepsy, or hysteria.
7. Those accompanied by night-mare, or dreams.
8. Ecstasy.
9. Those complicated with fevers and other chronic diseases.
10. Epidemic hallucinations.

1. ILLUSIONS OF THE SENSES.

Optical illusions are so common that men of science have been often perplexed in endeavoring to account for all the remarkable cases on scientific principles. Dr. David Brewster remarks that, “When we look with one eye there is *some* object to which we are perpetually blind. With the right eye this point is about fifteen degrees to the

right of the object looked at. Place two white wafers three inches apart, on a black ground, at twelve inches distance. Look at the left wafer with the right eye alone, and the other wafer will disappear. This illusion is caused by the parts of the retina, where the optic nerve enters, being insensible to light." He supposes by this fact may be explained some of the cases of vanishing spectres. Of such cases we shall here only notice such as are obviously connected with disordered health.

A literary lady saw illusions of her husband, of distant friends; she saw a coach driving up, and then the whole company it contained changed into skeletons and ghostly visages, and then vanished. At the time of seeing any of these phenomena she felt a peculiar sensation in the eyes, and during the six weeks, within three of which these illusions were seen, she was much reduced by a cough; and long experience proved that they were caused by disorder of the digestive organs. She was naturally morbidly sensitive. She could feel pain, sympathetically, in a part in which others said they suffered pain; and can feel pain in the limb which she is told is amputated. She talks in her sleep, repeats long passages of poetry when in ill health, never failing to quote lines beginning with the final letter of the last line, till her memory is exhausted. She thinks she understands the philosophy of her own case.

A gentleman, of Edinburgh, believed that he was, regularly every day, exactly one hour after eating, knocked down by an old witch-looking hag, like one of those that haunted the heath of fairies. Dr. Gregory watched him after he had dined at five o'clock. Exactly at six P. M., the doctor saw him fall into a fit of apoplexy, which always recurred at that hour.

A gentleman of the law was wearing down under an imaginary disease. He at first thought he saw constantly near him a black cat. At a later time, he saw always at his side a gentleman usher, dressed as if to wait upon the Lord Lieutenant of Ireland; this change was followed by another more unwelcome—it was a human skeleton. And when his physician placed himself in the spot where the skeleton was seen, the patient said he still saw the ghost peeping over the physician's shoulder. At this the man of science was startled also, at the thought of the ghost so near. He resorted to other means of cure, but the patient died, having sunk into deeper and deeper dejection.

Gleiditsch, the botanist, having charge of the Cabinet of Natural History at Berlin, entering the Hall of the Academy one day, saw the apparition of Maupertuis, who he knew was dead. Dr. Brewster says Maupertuis had long been President of the Academy, and much favored by Frederick II., till he was overwhelmed by the ridicule of Voltaire. He then retired almost in disgrace to Switzerland, and died in the family of Bernoulli, the mathematician. And now Gleiditsch per-

ceives him as well defined and as perfect as he ever saw him in the body, appearing to one who appreciated him in life, in the hall of his former greatness.

Illusions of the Ear.—These are alluded to by Milton as

“The airy tongues that syllable men’s names,
In groves and desert lands and wildernesses.”

The “Wild Huntsman,” was an imaginary sound resembling that of hounds and the noise and other accompaniments of hunting heard in the forests of Germany. That alluded to in a poem of unknown authority called Albino, is something of the same kind among the Scots. The hunter imagines he hears the sounds of huntsmen chasing the deer, but can see nothing.

“Nor knows, o’erawed, and trembling as he stands,
To what or whom he owes his idle fear.
To ghost, to witch, to fairy or to fiend,
But wonders and no end of wondering finds.”

A case of illusion is given by Dr. Wigan,* of a man who was convinced that he was haunted by a kind of *second self*, who “would argue with him pertinaciously, and to his great mortification sometimes refute him, which, as he was very proud of his logical powers, humiliated him exceedingly. In sitting by his side, I sometimes heard him exclaim ‘well that takes me quite aback, I must consider a little for an answer.’”

The mental hallucinations caused by exhaustion of the nervous energies from starvation, exposure and loss of sleep, are well shown in the cases related of persons shipwrecked. Of 150 persons who in 1816 abandoned the wreck of the French ship Medusa, west of Africa, and embarked on a raft, nearly all found their senses strangely disordered. M. Sauvigny twice saved his friend who rushed past him to throw himself into the sea. He says: His eyes closed involuntarily, drowsiness came over him, and the most delightful visions floated before his imagination. He saw around him a beautiful country covered with the scenes of happy life. Having still enough of reason left he took some wine and restored himself to a degree of consciousness of the real situation. Some of the party speedily became furious; others threw themselves into the sea, bidding farewell to their comrades with the utmost coolness. Some said “fear nothing, I am going to get assistance for you, and will quickly return.” Some rushed on their companions sword in hand, demanding food to appease the hunger that was consuming them; others sought repose in their hammocks, thinking they were still on board the Medusa. One calls out that he sees ships riding in the harbor of a magnificent city which would speedily be reached. M

* On the Duality of Mind, pp. 459, London, 1844.

Carrard thought he was travelling through the beautiful fields of Italy. An officer came up to him and said, "you recollect that we have been abandoned by the boats, but fear nothing: I am going to write to the governor; and in a few hours we shall be saved." Just then, the cries of confusion and disorder among their comrades roused them from the visions that bewildered them; when the clamor subsided, they again relapsed into their former condition. Next morning they awoke as from some painful dream; and they asked each other if they had not during sleep heard the sound of combats and cries of despair. Some answered that the same visions and sounds had continually haunted them. Every one believed that he was deceived by the illusions of some horrible dream. At length overcome, says M. Sauvigny, "with toil, want of food and sleep, we lay down and reposed till the full dawn of morning light revealed to our revived senses the horror of our situation. Many in their delusion had thrown themselves into the sea, about sixty-five had perished during the night, of whom one-fourth had drowned themselves in their despair; and of those that remained the deepest dejection was spread on every face. Some of us shedding tears of despair, bitterly deplored the hardness of our fate. Some of the wretches who survived commenced cutting up the bodies of the dead to eat."

The principal remedies for illusions of the senses are: *Aconite*, *Bell.*, *Stram.*, *Cicuta*, *Hyoscyamus*, *Opium*, see page 452.

DELIRIUM TREMENS.—MANIA A POTU.

This disease was first described by Dr. Thomas Sutton, of Greenwich, in a Tract published in 1813, under its present name.

Causes.—The true delirium tremens is only produced by the sudden withdrawal of stimulants after they have been long used. It is different from delirium ebriosorum, which may be excited in any individual by the use of stimulants, and depends on a congested state, while delirium tremens is an anaemic state of the hemispherical ganglia. (*Blake, on Delirium Tremens*, 1840.)

Many drunkards appear in the hospitals for some injury who are in the habit of swallowing a gallon of beer in a day, with a certain amount of gin to carry it off by the kidneys. On their admission to the hospital their supply is cut off; and a pint of beer extra is too small for them. In a few days they exhibit a slight tremor of the tongue *when protruded*; there is wildness about the eyes, unnatural quickness of manner in answering questions. They become busy, when alone, pulling the bedclothes or rolling up the upper sheet; the tongue not unusually dry and furred as in phrenitis; the skin bathed in sweat, the pulse quick and irregular in force and frequency. These premonitions are followed in a few hours by raving delirium.

Diagnosis.—It is not a fierce or mischievous delirium but a “busy delirium; he does it in a hurried manner, with a sort of anxiety to perform it properly. While he is yet able to go about he manifests great impatience at any interference or advice, or assistance in his ordinary duties, which he sets about in a bustling bungling manner.” Loquacity, extreme; he refers to matters not present before him; and while attending to one thing his mind wanders to others far distant. There is a mixture of the real and ideal in his thoughts and language; he is suspicious that those about him intend to injure him, or that he is surrounded by enemies; he does not sleep; is restless, rambling; the patient is found to have been habitually intemperate, is subject to some great source of care or anxiety or excitement; and has been recently debarred, by some cause, from his usual stimulus; being unwell, he has been kept on low diet; has perhaps been bled for the delirium and is worse for it; the tongue is moist, the skin sweating profusely; there is obstinate watchfulness. These cases often terminate in mental debility.

In true delirium tremens the head and skin are generally cool and moist; while they are hot and dry in delirium ebriosorum. The pupils are contracted in the early stage of both, and dilated in the latter stage.

Delirium ebriosorum.	Delirium tremens.
Conjunctiva, injected and red.	The reverse.
Mental derangement more exalted; more excited state of intellect.	Approaching depression and satiety.
Tongue dry, sometimes brown not uniform.	Tongue pale and furred. Sometimes entirely clean.
Pulse uncertain; for all inflammatory affections of the brain are depressing on the heart's action. In this form of brain-disease it is not hard and wiry, never amounting to one acutely inflammatory.	On the whole, there is less power in the beat of the artery.

The most difficult cases to diagnose are those accompanying injuries of the skull in persons of intemperate habits, as brewers, servants, &c. Mr. Tyrrell used to test them by beginning the treatment by such diffusible stimulants as Ammonia, the effect of which would soon pass off. The pulse when it alters much in rapidity or power generally indicates weakness rather than inflammation. Mr. Tyrrell says: a man received a severe blow on the head and reaction took place very slowly. Ammonia and porter were given him with caution and he improved. Another surgeon thought the case inflammatory and bled from the arm. He died the next morning with serous effusion in the brain; there had been no inflammation or congestion.

Symptoms.—“The head and skin,” says Dr. Solly, “are generally

cool and moist in delirium tremens; dry and hot in delirium ebriosorum. The pupil varies in both according to the stage; in the early stage of both it is generally contracted, in the latter stage dilated. The conjunctiva red and injected in delirium ebriosorum; the reverse in delirium tremens. The mental derangement in the former is more allied to an exalted, excited state of intellect; in the latter it approaches fatuity and depression. The tongue is generally pale and furred in delirium tremens, sometimes unnaturally clean and red; in delirium ebriosorum it is usually dry, and sometimes brown, but this is no certain guide. The pulse is most uncertain; but upon the whole, there is less power in the beat of the artery, and that more varied in delirium tremens than in delirium ebriosorum."

True delirium tremens is characterized by a wild expression of countenance; eyes fixed intently and earnestly upon some imaginary object in the room; constant endeavors to grasp or to avoid these visionary images; motions sudden and rapid; tremor of the hands and limbs, also of the tongue when protruded; tongue flabby and moist; pulse nearly natural; skin cool and often covered with perspiration; constant desire to move about; inability to concentrate the thoughts for any length of time; entire inability to sleep; mind wandering and delirious; bowels regular; face bloated; absence of thirst, heat and other febrile symptoms; general appearance of debility.

Delirium Ebriosorum may be recognized by the unnatural heat and dryness of the skin; face flushed; conjunctiva red and injected; expression fierce and excited; pulse frequent and full; tongue dry and red, or brown; boisterous delirium; increase of muscular strength, strong pulsations in the carotid and temporal arteries; pupils first contracted, afterwards dilated; inability to sleep night or day.

The feelings of an inebriate when he found himself about to enter upon the horrors of delirium tremens, are thus described by one who felt them: "The leading terror of that day was the dread of the loss, the transformation of my nature into the being of a drunkard. Never did any idea break upon me in such terrific, unmixed, unutterable horror! Appetite—accursed, uncontrollable appetite for a fluid which I well knew brought ruin, madness, desolation in its fierce track, appetite seemed about to overwhelm reason, and I should cease to be a man. I would that day, that fearful day, have grasped a bar of iron heated to a white heat in my bare hand, till it seared me to the bone, to have expelled the demon that was revelling in my veins, destroying my nature, and substituting a creature for which there is no class in the boundless universe of God's works." "It would be far less terrible to me to be changed into *any* form, to crawl a serpent and feed on the dust, so I carried with me the moral senses, and the intellectual principle, than to retain the human form animated by a principle no longer

human, guided and controlled by a sentient spirit composed of beast and fiend in passion; with no avenues of true communication with external and beautiful nature; false yet horrible in all its perceptions; sensitive to all the awful and unutterable pangs inflicted by monsters of its own creations, yet dead to all the just impressions of reality. No, if I am to be transformed and yet live, give me, if you please, any shape, any form, but let, oh, let me retain the mind and the heart of a man!"

PATHOLOGY.—*Delirium tremens* is classed as an *anæmic affection of the brain*. Amongst other reasons for this conclusion, Dr. Solly asserts that in all cases which he has examined after death, he "has invariably found the hemispherical ganglion pale and bloodless; the venous canals were generally full; and occasionally the arachnoid thickened, as if it had been the subject of chronic inflammation." A judicious distinction is made by this author, and some others of recent date, between the delirium which is produced by the sudden withdrawal of stimulants after a long and free indulgence, and that which may be excited in any person by an excessive temporary use of stimulants. The *former* is the *true delirium tremens*, which depends upon an *anæmic condition of the hemispherical ganglion*; the latter, *delirium ebriosorum*, depending upon a congested state of the same structure.

CAUSES.—Excessive and protracted use of alcoholic stimulants, particularly impure compounds, sold as wines and brandies, and abuse of opium. The proximate cause of the malady is the sudden withdrawal of the accustomed stimulant. *Delirium ebriosorum* arises from an excessive temporary use of the liquors. Alcohol being decidedly specific in its action upon the brain, is manifestly capable, when abused, of producing an inflammation of this organ, and consequently, the symptoms which characterize *delirium ebriosorum*. A long-continued abuse of this stimulant induces an *anæmic condition of the brain and nervous system*, thus developing the legitimate *secondary effect* of the article, while its *temporary abuse* induces the legitimate *primary effects*, which we observe in *delirium ebriosorum*.

PROGNOSIS.—*The Pulse.*—Though the state of the pulse is not always an infallible guide, it is generally safe when well understood. In this disease, when the pulse is not over 100 per minute, the case is not an extreme one. But, if the pulse, from its rapidity and the tremor of the hands, cannot be counted, the patient is in imminent danger.

TREATMENT OF DELIRIUM TREMENS.—In common practice this is directed by the diagnosis, which is often difficult. We may find that large doses of opium have been given to produce sleep, without effecting it. The case may be one of general *anæmia*, and yet there is *hyperæmia* of the brain. Under these conditions we commence the

treatment. Depletion in either form of delirium tremens is out of the question. Even local bleeding, by cupping or leeching, is injurious. A general warm bath may be borne in few cases, at the same time that cold in a mild degree is applied to the head. Ice is always too cold.

When the case is clearly one of delirium tremens, we begin to allow the patient a larger quantity of the stimulants than he has been recently using; though they have reduced the man to a beast by their abuse, we are compelled to resort to them again to save his life.

Opium, Ammonia and other stimulants are remedial, because their action is partially *similar* to that of the alcohol that caused the disease. Sufficient nutritious food must be given, and it may be solid when the stomach will digest it.

The Expectant method of treatment is practised by medical teachers of high character. Dr. Dunglison wrote, in 1842, that after the withdrawal of the accustomed stimulants, the "recuperative powers are generally entirely sufficient to bring about the necessary equalization." He, therefore, gave neither stimulants nor opiates. "For six months in the Lunatic Asylum at Philadelphia, no alcohol nor opium were allowed." (*Amer. Med. Intelligencer.*) In 1848, he said his practice continued the same. "Every day's privation from the accustomed stimulus, diminished the feeling of necessity and the desire for it."

That delirium and sleeplessness indicate comparatively harmless conditions of the nervous system; that they are usually symptoms of some disease occurring in persons of drunken habits, and they usually cease within a given time spontaneously; are generally known, and on that ground it is advised not to give any thing for them. (*Edinb. Med. Jour.*, April, 1860, p. 924.)

Nux-vomica.—Trembling of the limbs; spasmodic twitchings in different parts of the body; countenance pale and bloated; tongue white and moist; vomiting; surface covered with sweat. Constant uneasiness, anguish, and desire to run away; troublesome visions, pressure and burning at the stomach; constipation; vertigo; headache; cold extremities; head cold or hot; sensation of debility or faintness. Silent; apprehensive of death; confusion of ideas; depression of spirits; desire to be in the open air.

Belladonna is well adapted for the cure of delirium ebriosorum, occurring in individuals of a full, plethoric habit, and presenting the following symptoms: congestion of blood to the head; heat and pain in the head; flushed face; injected eyes; boisterous delirium; insomnia; strong pulsations of the carotid and temporal arteries; great nervous erethism; the tongue and mouth red, hot, and dry; thirst; trembling, with cramp-like pains; starting suddenly from sleep; failure

sharp pain in the neck and limbs; sparks before the eyes, &c.

In the two cases of poisoning by Belladonna berries, given by Mr. Smith, of Leeds, in the *Med. Times*, Dec. 3, 1859, we see symptoms characteristic of this disease. The symptoms, he says, appeared in the following order: "Drowsiness of mouth and throat; indistinctness of voice and dilated pupil, continuing longer than any other symptom there, a severe case of delirium." The "delirium was of a busy, restless, excited character, but generally rather pleasing than otherwise. The patients appeared to think they were pursuing their ordinary avocations. One boy was eager in flying a kite; another pulled chairs and boxes about thinking he was working in a coal-pit. A woman was unusually busy in her ordinary household duties. All their movements were of a quick, excited character; the skin was in most cases moderately cool, pulse rapid, but without power."

Syntoxia and *Hysterismus* may be exhibited in cases complicated with epileptic paroxysms, when there are: convulsive movements; *sudoratus tonitrus*; fainting fits; muttering delirium; picking at imaginary objects; suppression of the secretions; extreme irritability; overexcited and rapid motions; contraction and stretching of the limbs; irascible; noisy and difficult to manage.

The vapor of *Syphorether*, of *Chloroform*, and the nitrous oxide gas may be inhaled with advantage in cases which are characterized in the commencement by great mental exhilaration; increased muscular force; constant desire to move about rapidly, to dance, to sing, to leap, to fight or do something extravagant; flushed cheeks; accelerated respiration, frequent pulse, succeeded in a short time by profound sleep, or sleep disturbed by visions; general insensibility to external impressions, with pallid and death-like expression of countenance. Many cases have been cured by these remedies.

Hysteria.—An English physician has published an account of his treatment of this malady, with enormous doses of Digitalis. The medical world scarcely credited it, and were slow to adopt what seemed to be a dangerous experiment. But the remedy was tried by some of the livelier members of the profession, and it exceeded their expectations. In what manner it acts is still a question of much doubt. Cases have been treated successfully with half ounce doses.

Devil's Disease.—The patient was of middle age, a German, who was drinking poor whiskey, excessively. He was very furious, and was always trying to get away from imaginary devils, which he said were in hot pursuit. The pulse was over 100; hands and feet were hot; eyes glossy and injected. He was very much fatigued, and could hardly be restrained. *Nux* 1, was given with no apparent effect. *Stram.* and

Hyos. were tried in vain. In the night one-quarter grain doses of Morphine were given every half hour, but after four grains he was as wild and excited as ever. Digitalis was given in drachm-doses, repeated every two hours.* After the second drachm had been taken ten or fifteen minutes, the man got up from his chair, and in trying to get out of the door, fell down insensible. His pulse was then firm and 86. He was laid upon the bed, and in about twenty minutes awoke perfectly rational and calm! No other medicine was needed, and in a few days he was at work.

In a case related by Dr. Carey, Opium aggravated the symptoms; whilst half an ounce of tincture of Digitalis, with an equal quantity of gin, caused the patient to fall into a deep sleep, which continued without intermission for twelve hours. He awoke quite rational and in two days was quite well. The Digitalis did not produce its alleged results, diarrhoea and vomiting, nor were the kidneys stimulated to increased action. The influence of the drug on the pulse was not such as to offer any barrier to its repetition.

"The large doses of tinct. Digitalis, half ounce doses, at long intervals of twenty-four hours, may be given safely. The pulse falls, but acquires power and steadiness, and the tremor subsides. It is best to confine its use to young and robust subjects, whose strength has not been broken down by prolonged habits of intemperance, and to cases of excessive drinking. (Dr. Peacock.)

Cimifuga.—King, in his *Disp.*, (Art. *Cimicifuga*), says: "I have known three drops of the saturated tincture, given every hour for three hours, to produce symptoms in every way simulating those of *delirium tremens*."

And yet this same remedy is advised by all eclectic writers, and is used with great success in all diseases characterised by excessive nervous irritability. It is said to allay nervous excitement promptly, and ward off impending spasms; to "lessen the tendency to cerebral congestion, and quiet the pulse." In my practice small doses fulfil these indications admirably in many instances. (Dr. Hale.)

Asarum-europaeum.—This plant is known in Russia as a remedy for the effects of alcohol poisoning. The effects required to restore the inebriate are various; he has been injured in the gastric mucous membrane; he has become a dyspeptic; the nervous centres have been overstrained to high preternatural exertion; and the blood itself has become loaded with an injurious foreign material; he has acquired a true *dyscrasia*. Whether the Asarum is capable of fulfilling all the indications remains to be further tested.

It acts, 1. By partially restoring the digestive power which has been almost destroyed by the poison. The aromatic principle, & Dr. Smirnaff, has an influence in "regulating the condition of"

discharges, producing purging and vomiting when given in large doses."*

2. It restores the defective appetite.

3. Counteracts the irresistible longing for alcohol. "The horrible sensations with which drunkards awake in the morning, and which compels them to seek temporary and delusive relief from renewed intoxication, are much blunted and mitigated by means of a glass of the infusion of Asarum, and of some nervine, as Valerian. Its immediate effect is often to produce vomiting, and sometimes purging; but the painful sensations at the epigastrium undergo relief, and the appetite becomes invigorated." In cases of persons who have long been accustomed to alcoholic drinks, Dr. Smirnaff gives the Asarum in brandy, applying at the same time a counter-irritant to the pit of the stomach. As soon as it is possible to omit the allowance of alcohol, it should be prohibited.

In persons who have long been accustomed to periodical paroxysms of drunkenness, with intervening intervals of soberness, the constant use of the Asarum has enabled the patient to postpone the periods of drunkenness, and the consequent delirium tremens. The patients themselves are sometimes surprised at the effect of the Asarum in lessening the injurious results of prolonged intemperance. Dr. Smirnaff prescribes three or four glasses a day of an infusion made with $\frac{3}{2}$ ii. of Asarum root, $\frac{1}{2}$ i. of Valerian root, and $\frac{3}{2}$ ss. of Orange-peel.

The following is also a popular remedy in Russia for drunkenness:

R. Ammon.-carb. $\frac{3}{2}$ ss., Aceti.-vini. lb.i., Oxymel-scill. $\frac{3}{2}$ ss. Two table-spoons full every two hours.

PROPHYLACTICS.—Hering proposes the following remedies: "Take Sulphur every morning seven days. Should the craving abate and return afterwards, let him take Nux-vomica in the evening; if it return again in two or three days after, give Sulphur, repeating these remedies in the same order. If this be unsuccessful, give Arsenicum. If this does good but temporarily, give Nux-vomica one day, and three days after Arsenicum."

Sulphuric-acid.—Hering also adopts this remedy from popular practice. One drop only in a glass of water, to be taken every morning for two or three days, until it produces disagreeable symptoms. In cases where this quantity would fail, he gives it in larger quantity, so as to make the water taste perceptibly sour. This is to be continued till it produces soreness of the mouth.

Ipecacuanha, Mr. Higginbottom, (*Lancet*, 1857, p. 525,) says in emetic doses at the beginning of a fit of intemperance, removes the desire for intoxicating drinks. Being less debilitating than Tartar-

* *Med. Zeit., Russland*, 1859, No. 8.

emetic, it does little injury if often repeated. It stimulates the whole system, equalizes the circulation, and promotes the deranged secretions. It is proposed to continue this practice for fourteen days: as Marshall said, "If a man gets drunk, he cannot altogether get rid of the nervous poison of alcohol from his body in less time than a fortnight."

3. ALCOHOLISMUS.—CHRONICUS.

Under this title, Dr. Huss, of Sweden, has explained the disease which results from "prolonged and habitual dram-drinking." In a work published at Stockholm, 1851, he says, (p. 18), "We give the name alcoholismus-chronicus to those groups of nervous symptoms, which affecting alike the motor and sensorial powers, and the mental faculties of the individual affected, proceed generally in a slow and chronic course, and are not to be referred directly to any lesion of the nervous system appreciable during life, or discoverable on *post-mortem* examination. Such symptoms are to be met with in persons who have long taken ardent spirits in excess." "There are many men who drink habitually six or eight glasses of undiluted spirits daily for several years without greatly deranging their health. I have known a few men who continued to be habitually intemperate to advanced age, retaining robust health. But these were extraordinary cases. It is much more usual to see a gradual change come over the habitual spirit-drinker, until he finds himself in the height of a paroxysm of delirium tremens, from which he never fully recovers. He begins to find his digestive powers impaired; he becomes dyspeptic, and can only eat solid food by taking a drink of brandy with each mouthful." Some when trying to keep sober take only vinegar or hot spices.

Dr. Huss details one case in which all these symptoms were regularly developed; and after efforts at reform and some treatment there was some improvement. On resuming his former habits and again neglecting to take his ordinary meals, the symptoms returned, and digestion became more deranged than before. There was now frequent vomiting of tough acid mucus, with a sense of weight and distention at the epigastrium after taking food; there were emaciation, discoloring of the skin, which was of a dirty yellow. The sensation was now of ants creeping in the skin; muscular debility accompanied by painful cramps and startings in the feet and calves of the legs, resembling electric shocks, extending from the extremities to other parts of the body, and increased in severity till complete epileptic seizures, followed by delirium and hallucinations, were of daily occurrence. Vision became imperfect, the letters of a book seeming to run together in a confused mass: and the powers of thought and memory -

diminished. At a later period he had severe pains in the legs, resembling such as would be made by burning or cutting with knives. When least severe there was still great restlessness, and he continually moved the legs in bed. The strength declined, diarrhoea came on, he was perfectly emaciated; the skin assumed the appearance of parchment. The patient sank into low-muttering delirium, and died of complete exhaustion. (See *Huss*, p. 21.)

DIAGNOSIS.—Distinguished from lead-poisoning by the fact of the previous intemperate character of the patient; and the absence of the blue circle upon the gums, the peculiar nauseous smell of the breath, which are characteristic of lead-poisoning. The skin in alcoholismus is of a yellow hue, in lead-poisoning it is a dusky gray. In the former there are symptoms of gastro-enteritis, commonly preceded by one or more attacks of delirium tremens.

The tremors in this disease somewhat resemble those from slow poison by Arsenic; but in the latter they are not relieved by a dose of Alcohol. They are not more severe in the morning than at other times, and are usually accompanied by spinal irritation. In Alcoholismus the mind is impaired; there are vertigo, ringing in the ears, *muscae volitantes*, dilated pupils, hallucinations and delirium, which do not occur in poisoning by Arsenic.

Mercurial fumes from the operation of water-gilding produce nervous tremors, loosening of the teeth, pains in the limbs, and salivation; but the mind is not affected. These tremors are less benefitted by stimulants than those from Alcohol, even temporarily. Flouquet formerly referred many of the symptoms of this disease to the copper-vessels in which distillation was carried on; but copper vessels are now less exclusively used, and yet alcoholic poisoning progresses with the increased consumption of alcoholic liquors in every form.

Phosphorus.—Its fumes produce formications, tremors, muscular debility; and the operatives in friction-match manufactories are liable to a peculiar form of caries of the jaw-bones (See *Phosphor-necrosis*, p. 362.) But there are none of the characteristic cerebral symptoms of Alcohol.

Secale-cornutum produces some of the symptoms of Alcohol; but in Secale they are more rapidly developed; they commence with mere pain of the stomach, and are accompanied with colic and jerking, convulsive movements of the limbs, followed by paralysis and anæsthesia. Women are more often affected by ergot than men: it is likely to poison many persons in a community at the same time, including persons of all ages and conditions, if they have taken of the deleterious food. But the brain is generally unaffected; the skin has not the characteristic yellowish hue; and the digestive functions after a time recover their tone, without the persistent gastritis.

Progressive Paralysis of the Insane presents some of the alcoholic symptoms; but the tremors do not appear early, while faltering speech, retraction of the corners of the mouth and vacant expression of the countenance are early observed. The tremors may prevail over the whole body; the pupils are little dilated, sensibility to light remains; the symptoms are not worse in the morning; the creeping sensations beneath the skin are not felt, and a dose of Alcohol affords no relief.

General Progressive Paralysis begins in the lower extremities without cramps or startings; sleep may continue undisturbed, digestion may continue good, and the appetite may be morbidly increased. Sensibility becomes diminished over the whole body at once; in alcoholismus it is first diminished at the points of the fingers and toes.

Mania often begins in "monomanie ambitieuse" and maniacal excitement. In alcoholic poisoning there is only the muttering delirium towards the end. Delirium tremens furnishes the only approach to maniacal excitement from alcoholismus.

CAUSES.—Northern nations have long been noted for drinking large quantities of alcoholic stimulants. Intemperance has been more general in the North of Europe than the South. The severe weather and bad food have furnished the laboring classes with an excuse for regarding stimulants as a necessary of life. Hereditary predisposition has been supposed to influence the formation of this disease. Dr. Huss regards this opinion as improbable, but further observation proves it, to some extent, true.

The habitual use of alcoholic drinks in any form is the usual and, indeed, only cause of this disease. The time that may be required to develop it fully varies in different persons. In the cities a large proportion of the working-people drink from twelve to fifteen glasses of brandy or whiskey per day. At this day nearly all liquors are adulterated, and their usual bad effects are in part attributable to the poisonous articles taken with them. Dr. Huss says the most usual cause of the disease in Sweden is, the habitual use of brandy distilled from potatoes. To test the relative qualities of the pure and impure brandy, he experimented on three dogs for several months; giving to one purified brandy six ounces per day, and to the other two an equal quantity of that commonly used by the working-classes in Sweden. During the first three months intoxication and intense thirst were occasioned by each dose, but the animals were fat and appeared well. In the fourth month they had dry cough, and barked hoarsely, the eyes staring and full of tears; hearing diminished; restless sleep, with jerking of the limbs. At the end of the fourth month the dogs trembled when they attempted to stand, their walk was shuffling,

was weakness of the extremities, especially the hind-legs, and they remained in sitting posture to take food. They next had cramps and convulsive movements in the extremities and trunk, both during sleep and when awake and lying on their sides. The sight of other dogs roused them at all times from their apathetic condition, and they endeavored to attack and bite them. Their powers gradually diminished, and the sensibility of the skin, especially of the ears, was remarkably lessened. They now lost appetite and powers of digestion rapidly, but their irritability towards other dogs continued till death. The fat was rather increased, but they all died about the eighth month.

The disease in man is seldom developed so rapidly. Many pursue a course of stimulation without intoxication for several years. The nervous symptoms are generally preceded by derangement of the digestive organs, though the primary poisonous influence is strongly exhibited in the brain and nerves.

REMEDIES.—*Opium, Cannabis-ind., Nux-vomica, Belladonna, Hyoscyamus, Stramonium, Ether-vapor, Chloroform, Protoxyd of Nitrogen, Ammon.-carb.*

Intoxication.—In ordinary cases, if there be no reason for haste, permit the intoxicated person to sleep long enough to partially recover from the effects of the poison.

Cold-water. When it is necessary to arouse him it may be generally done by dashing cold water upon his forehead with considerable force: it is still more effectual if poured from a considerable height.

Opium is the proper remedy, when the dashing of the cold-water has only a temporary effect; if the muscles of the face are convulsed, or the cramp prevents the opening of the mouth, give Opium at short intervals till the improvement is visible.

Coffee, hot, and without milk, is the best restorative after recovered consciousness; the patient continues vomiting and retching.

Salt-water has a homœopathic action upon the inflamed surface of the inebriate's stomach. A popular remedy for the restoration of drunkards after a debauch is the Water of the Blue Licks, Kentucky, which is highly charged with chloride of Sodium and sulphuretted Hydrogen.

Belladonna and *Aconite*, if Opium fails. If there be torpid sleep, Opium is the best remedy.

Opium.—Skin cold and covered with sweat; tongue moist and red; wild and staring expression; motions rapid and constant; grasping at imaginary visions; pulse rather below the natural standard; tremor of the hands and limbs; unsteadiness in moving about; face pale and bloated. Tormented with frightful or fantastic visions, giddiness; confusion of ideas; inability to compose or to concentrate the mind, or to sleep; sensation of numbness or prickling in different parts of the

body. Delirium: frightful or fantastic visions; confusion of ideas; stupefaction; gloomy feeling; inclination to commit suicide. Of the effects of opium in causing illusions of the senses, De Quincy says in his "Confessions": "After several years' experimenting on the daily use of opium, the torpor of the intellectual powers became a perpetual torment." The worst of all were his dreams. In the middle of 1817, a faculty of conjuring up all sorts of phantoms in the dark became truly distressing. While he lay on his bed, vast processions marched before him in mournful pomp; sad and solemn as if they had issued from the tombs before the times of Troy, before Tyre, before Memphis. At the same time a theatre seemed lighted up within the brain which presented nightly spectacles of more than earthly splendor. Whatever he called up in memory traced itself in images upon the darkness, and transferred itself to his dream afterwards with a brilliancy insupportable; and all other changes in his dreams were accompanied by deep-seated anxiety, and gloomy melancholy, utterly incomunicable by words. (*Confessions of an Opium Eater.* London, 1821.)

4. DEMENTIA.

In this variety of insanity the intellectual faculties are all impaired; the power to concentrate the thoughts, to arrange and compare ideas, or to draw inferences is lost. The past is a blank to the unfortunate victim, and thus, family, friends, home, the associations of early years, as well as the cares and pleasures of maturity are all forgotten. Yet the irritation of the cerebral structure often incessantly impels the patient to move about, and to give utterance to the random and incoherent images which are constantly passing through his brain. Some are silent and almost insensible to everything around them. If articles are presented or topics of interest broached for their attention, apparently no impression is produced; but the mind still pursues its incoherent wanderings.

This form of insanity is more difficult of cure than either of the others; for the causes are usually so gradual and insidious that the cerebral mass becomes hopelessly disorganized, or the meninges permanently thickened and adherent to the cranium, before serious alarm is taken. If, however, the malady is attacked within the first few months or the first year, hopes of cure may be entertained. Dr. Brigham asserts that "insanity is rarely cured after it has uninterruptedly continued two years, though there is always hope if the patient is vigorous and the form of insanity varies."

Gradual Decay from Old Age.—The point at which it may be said to commence might produce much embarrassment in a will-case. And such cases frequently occur.

Old persons often grow very capricious or jealous of attentions; and the artful and designing often insinuate themselves into their good graces, excite in them prejudices against their friends and relatives, and become themselves the heirs unjustly of the property by the will of the individual. In many of these cases it is extremely difficult to determine whether the will so made was dictated by a clear judgment and correct motives, or whether its author had fallen into a real dementia, and was truly incapable of making a legal will.

Pathology.—Every one knows that at a late period of life we have marked decay of intellectual power, and that the man falls into a second childhood. The pathology of this condition is revealed by the ingenious and accurate investigations of Cauzervielh and Desmoulins, two continental pathologists, who have shown that a kind of *atrophy* of the brain takes place in old persons. Desmoulins found that after the age of seventy years, the weight of the brain was from one-twentieth to one-fifteenth less than in the adult. This atrophy of the brain is connected with old age, and not with any general emaciation; for in cases of chronic emaciation in adults the brain is the last part to waste away; and this may explain the continuation of mental power in phthisical subjects.

Thus every peculiarity of mental manifestation has some relation to the organization and degree of perfection in function of the material organs through which the soul holds its intercourse with the external world. When the labors and cares of a long life have nearly worn out the physical organization the tenant within becomes mentally as well as physically feeble. The man who has reached "second childhood" is thus described:

"On his staff,
Bending he leaned; and from his weary eye
Distressing sight! a single tear drop wept,
None followed, for the fount of tears was dry.
Alone and last, it fell from wrinkle down
To wrinkle, till it lost itself, drunk by
The withered cheek on which again no smile
Should come, or drop of tenderness be seen."

REMEDIES.—*Op., Stram., Phos., Carb.-an., Nux-v.*

5. NOSTALGIA.—HOME-SICKNESS.

Mountainous countries have presented the world with the most striking examples of nostalgia. Thus:

"The intrepid Swiss who guards a foreign shore,
Condemned to climb his native cliffs no more,"

Remembers in a distant land the happy home of his childhood among the valleys of the Alps, and desires to return to live and die there.

His mind dwells upon it with an increasing intensity till it becomes a deep-seated and inveterate disease,—the “maladie de pays,”—and he refuses to be comforted, as the captive Jews at Babylon, “hung their harps upon the willows” and refused to sing the songs of Zion in a strange land, though that land was more beautiful than their own. The nostalgic patient “nurses his misery, augments it till it destroys his nightly repose and his daily peace, and ultimately devours with more or less rapidity his vital organs.”

The origin of this peculiar longing of the natives of hilly countries to return to their native highlands has been sought for in the native beauty of the scenery in which their early years were passed, “in the peculiar sense of freedom or liberty, and the feelings of exhilaration which the pure, bright, and cool atmosphere of highland countries induces, compared with the depressing effects of the lower lands.” When the Scottish Highlander, far from his mountain-home, hears a single strain of the “slogan,” or the “Ranz des Vaches,” the memories of the mist-covered cliffs on which he was once happy, he is seized with an inexpressible desire, amounting almost to madness, to be once again and immediately at home. And the Swiss soldier, when far from the scenes of his childhood and his native cliffs,

“Perchance he hears those airs, so sweetly wild,
Which on those cliffs his youthful hours beguiled,
Melts at the long-lost scenes that round him rise,
And sinks a martyr to repentant sighs.”

REMEDIES.—*Cupr., Bell., Carb.-am., Helleb., Merc., Nitr.-ac., Sil., Mag.-mur.*

Recapitulation of Remedies.—Insanity caused by depressing emotions, as : grief, mortification, chagrin or anger, give : *Ignatia, Phos.-ac., Staph., Hyos., Nux-v., Plat.*

If caused by excessive study, use : *Lach., Plat., Stram., Nux-v., Sulph.*

Insanity from deranged menstruation : *Acon., Bell., Plat., Puls., Stram., Veratr.-alb., Cupr., Sulph.*

For Mental Derangement accompanied with insanity, fear, frightful visions and thoughts, use : *Bell., Hyos., Op., Stram., Lycop., Nux-v.*

When accompanied by restlessness and inability to lie still or sleep : *Bell., Hyos., Nux-v., Op., Stram., Verat., Acon., Canth.*

Religious excitement manifested by moaning, begging, praying, kneeling, &c.:

Bell., Hyos., Lach., Stram., Sulph., Aurum.

Violent raving, swearing, &c.: *Anac., Bell.*

For rage, biting, spitting, tearing, &c.: *Bell., Canth., Stram., Agaricus, Cannabis-ind.*

For illusions of fancy, visions, seeing ghosts, &c.: *Stram., Bell., Hyos., Opium.*

For erroneous fancies, fixed ideas, &c.: *Bell., Coccus., Ignat., Phos.-ac., Stram.*

For crazy mirthfulness, singing, whistling, dancing: *Bell., Coffea, Op., Stram.*

For foolish gesticulations: *Bell., Hyos., Mosch., Stram.*

For constant talking, constant working at useless labor or employments without stopping to rest: *Bell., Merc., Stram., Camph., Opium.*

GENUS IV.—FATUITY.—IDIOCY.

Idiocy is a common affection. Cases are given by Pinel, Haslam, Rush, Esquirol and others, of partial idiocy. Partial idiocy is seen in a large scale in the Cretins. M. Fodere says, (*Traité du Goitre et de la Cretinisme*, p. 133), "It is marked by an inexplicable singularity, that some of these individuals, endowed with such feeble minds, are born with a peculiar talent for copying paintings, for rhyming or music. I have known several who taught themselves to play passably on the organ and harpsichord; others who understand, without ever having a master, the repairing of watches and the construction of some pieces of mechanism." And yet these individuals could not read books of mechanics; but "*ils étaient deroutés lorsqu' on en parlait, et ne s' perfectionnaient jamais.*" They differ also in the kind of their idiocy, and in the degree and kind of their mental power. One is all kindness, another full of mischief. One has a perception of musical harmony, another none. Pinel says, one idiot girl surpassed all he ever saw in imitation of the actions of others; but had not intellect enough to attach any idea to any sound she uttered. Dr. Rush said, one man had remarkable religious feelings, but was deficient in the other moral sentiments.

The idiot is deprived of all reason, and his whole sentient powers are weak and depraved. The countenance vacant; often distorted, often presenting an unmeaning smile or laugh; the saliva flows from his mouth; the limbs hang carelessly dangling; the whole physical as well as mental system is in a morbid condition.

Idiots are usually innocent or inoffensive, pusillanimous and submissive; more sinned against than sinning, and the law regards them with charity and commiseration. They are allowed to go at large, although their property is placed under the care of trustees. A will made by an idiot, or a marriage contract, is null and void, inasmuch as they are incapable, of their own free will, of performing either of these acts. To constitute an idiot in law the individual must be incapable of understanding the simplest duties of life.

CAUSES.—Idiotism is congenital, or it arises in after life:

1. When congenital it arises from bad conformation of parents, by bad diet, clothing or disease. In those countries where goitre abounds idiots are numerous. It is proved that intermarriages between near relatives, by lessening the physical and mental powers, produce idiotism in their children. It may be caused by long-continued nervous fever, or any cause that can destroy the sensorial or nervous power.

CAUSES.—Dr. Howe, of the Massachusetts School for Idiotic Youth, traced a few years ago the antecedents of 359 congenital idiots. His report says: "It was found that almost all these came of very poor and feeble stock. In every case, except *four*, or in 355 cases, the parents were closely related by blood, or one or the other of them had a decided hereditary tendency to mental derangement; or was of a marked scrofulous habit of body; or was impaired in health by disease, or by intemperance, or by sensual excesses—so that the idiocy of the child was clearly explicable upon physiological principles." "In the matter of intermarriage," says Howe, "my experience with various classes of infirm children, goes to show that nature protests against it, and sometimes with terrible vehemence. Where both parties are of sound constitutions, and without marked tendencies to any particular form of disease, the liability to infirmity among the immediate offspring is small. Where one party is of unsound constitution, the liability is greater. Where both are unsound it is very great. Where one party has a constitutional tendency to a particular form of disease, and the other has no such tendency, or a tendency to some other form of disease, the diverging tendencies seem to correct each other, so that the liability is not great; but where both have the same constitutional tendency, then the danger is so great that some kind of infirmity is almost sure to appear in some of the offspring."*

PATHOLOGY.—If the mind of a child is not developed at the usual period, or is developed imperfectly, we infer that there must be structural and radical defect in some part of the child's bodily organization, or obstructions to the performance of its functions. We infer this as a watchmaker diagnoses the nature of the disease which prevents the watch from keeping the true time. The "works" are *out of order*, or there has been original malconstruction or defect. In the case of the idiotic child there may be malconstruction or defect in the very organization of the child and we may not be able to remove it. We can but partially remedy it. We cannot, like the watchmaker, put in a new wheel or new spring, for we have no creative power. But, if the parts were all originally well constructed, and are all in their places, the disease is only *functional* and may be remedied. If we cure at all we must do it by acting upon this materialistic view of the estab-

* Report of Dr. Samuel G. Howe, to the Legislature. Mass., 1854.
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fixed laws of nature; it is characterized, like every other ordinance of the Creator, by divine wisdom and benevolence.

There is a natural predisposition in the human mind to regard things spiritual as entirely superior to things physical; and this predisposition is so inveterate that most people naturally believe, as if by intuition, that idiocy and insanity are diseases of the soul and not of the body. The parent of the idiotic child never tries to conceal its physical infirmities, but points them out, asks what can be done for them. But the mother shrinks from the sight of spiritual or mental defect. She does not at once admit frankly that it is idiotic; "she admits that the child cannot do this or that; cannot understand one thing from another;" but then she states eagerly something else that it can do, or can say, and apologizes for what it cannot. She begs not to suppose that the poor thing is an idiot, but especially not to suppose that it was born so. "The mother weeps for the bodily infirmity of her child, but she blushes for his mental infirmity. The tear is natural, and the blush is not at all conventional." Were it generally known that the defect of the mind is dependent on defect of bodily organization, it would, perhaps, be less common than it is; when it does occur it would be less distress to the parents, and they would be more prompt in making efforts, by treatment and education, to have the defect corrected.

PROGNOSIS.—When idiocy is accompanied by epileptic fits, severe and oft recurring, it is generally regarded as incurable; though several thus affected have been cured by correct moral and physical training. Among idiots the general standard of health is low. They nearly all belong to families which inherit scrofula or other dyscrasias. Generally one parent at least has been of feeble structure, and of unhealthy condition of body or mind. Great numbers of idiotic children die either in infancy or early childhood. Some die of epilepsy or other spasmoid fits. Later in life they destroy themselves by gluttony or self-abuse; or they are killed by drugs or other pernicious influences. Few reach maturity; fewer still reach old age.

TREATMENT.—We begin our efforts by trying to correct the constitutional defect, the *general* dyscrasia or ill health, which in some form is always present. "The growth and strength of the brain depend upon the health and growth of the great central organs of the trunk. If these are in full vigor they affect the brain favorably, which consequently attains its maximum power, and the person feels particularly bright; but if the great organs are in any way embarrassed in their functions, the brain partakes of the embarrassment, and the man who owns it becomes stupid." (*Dr. Howe.*) There are men who, during early and mature manhood, are acknowledged to have a respectable share of mental power; "but when the period of greatest

intensity of automatic functions is passed over, the brain slackens in its action, the mental manifestations diminish, and the man is seen to be a weak man, if not a fool, long before he dies."

DIAGNOSIS.—The idiot reveals in his language as well as in his appearance and actions his deficiency of intellect. He does not pass beyond the mere rudimentary parts of language, does not comprehend anything more than the general forms and sensible qualities of objects. "When it comes to that subtle but real transition from language expressive of the qualities and attributes of material objects, to language expressive of immaterial and moral relations, they stumble at the threshold. An idiot may, perhaps, make the transition easily enough, from the pleasure of tasting sweets to pleasure in the society of another; he may say John or Mary is sweet, good or kind, but there he stops. If he goes on to acquire the more complex parts of language, then he is no longer an idiot. The idiot never uses the more complex and subtle forms of language. A few use words of all the common parts of speech. Some use nouns only; others are speechless or use only interjectional expressions. A few read simple sentences and comprehend them. Some pronounce words pointed out to them without knowing their meaning. Arithmetic is studied in the school for idiots, and some idiots show astonishing capacity for making arithmetical calculations." Dr. Howe, on this subject, says: "Ciphering, said an eminent philosopher, is done in a small corner of a man's brain, and he might have added that it may be done in a small corner of a very small brain. Men of quick parts are sometimes so deficient in the faculty of number that they can hardly understand simple arithmetical processes; and some are even perplexed about reckoning change for money. On the other hand, there are persons of less than general average ability, who have what seems to be an intuitive perception of the relations of numbers, and who can see at a glance the result of intricate combinations, which ordinary persons can arrive at only by long and laborious ciphering. Some of these mathematical prodigies, as they are called, not only have no other faculty well developed except that of number, but even this ceases to work after they pass the period of youth; and from being tolerably bright, they become intolerably stupid. Such cases go to confirm the notion of the independence of the faculty by which we perceive the relations of number."

The education of idiots has now been successfully tried. The Report of the Massachusetts School says: "About half of the pupils study geography. One class can name the great divisions of land and water, the mountains, rivers, and the like. They can give the names of the States, and tell which is the capital of each. With an expert teacher, they can make a recitation that excites the admiration of a chari-

"gray matter" to the aggregations of the cells, of "white substance" to those of the fibres.

Other distinctive features of the nervous cells and fibres are revealed by the microscope. It shows that the nervous cells are not, as in other tissues, mere rounded nucleated bodies, having no connection with other parts, or with one another. They present emerging from their circumferences tails or processes of extreme tenuity—sometimes having one tail only, in which case the cells are styled unipolar, sometimes possessing many, when they are styled multipolar. The connection of these processes with the fibres of the issuing nerves was first demonstrated by Van der Kolk, who gives some beautiful plates, drawn from microscopical survey, illustrative of the manner in which cells are united with nerve fibre and with neighboring cells by their processes.

The nerve fibres belonging to this system are divisible into two kinds, the tubular and the gelatinous. The former are of rounded shape, white color, and firm consistence; they constitute the greater portion of the cerebro-spinal nerves, and of the white substance of the inter-cranial and intra-spinal ganglia. They are composed of three parts. 1. The *neurilemma* or enveloping membrane of fine areolar tissue. 2. A firm tube within the neurilemma, called by Schwann the *white substance*. 3. Innermost of all the *axis cylinder*, which is considered as the (physiological) prolongation of the cell-processes and the essential element of the nerve.

The axis cylinder is quite distinct structurally from the other constituents of the fibre, for it is often seen projecting beyond them in a broken fibre. The gelatinous fibres, on the other hand, are flat, soft, and of a reddish gray color; they abound in the sympathetic system, of which they are considered by many to be the proper fibres, but are also found sparingly in many of the cerebro-spinal nerves. They are distributed to the coats of blood-vessels, and other involuntary muscles, whose fibres they strikingly resemble. They are homogeneous in consistence, and have numerous corpuscles resembling cell-nuclei lying upon them, as have the unstriped muscular fibres. All nerve fibres, tubular and gelatinous, lie side by side in the bundles of them, called nerves, without inosculation or division, in arteries, so that each fibre pursues its own independent course from centre to circumference. In an equally independent manner do they unite at their terminal extremities with the elementary fibres of the muscles which they animate.

The nervous tissue is largely supplied with blood, the intra-cranial mass alone receiving one-sixth of the entire quantity in the body, to which its weight bears a proportion of only one to thirty-six. Moreover, the gray matter receives by far the greater amount of this copious supply.

Effect of the extirpation of the Nerve of a given part.—If a nerve be extirpated, the part to which it is distributed loses sensibility to stimuli, or power of motion, or both. If the nerve be simply divided in its course, the same loss is manifested in the parts supplied by its branches given off below the place of section, but not in those deriving their fibres from the portion still connected with the centre. If the central ganglion be destroyed, the issuing nerve remaining entire, the same loss of function is manifested as when the nerve is divided or extirpated. From these facts we infer that the nervous system is the seat of a power which conveys the orders of the will to the muscles, and endows the frame with the various kinds of sensibility manifested by it to external impressions; and that of this power, whatever be its nature, the gray matter is the generator, and the white substance only the conductor.

Physiological Inquiries on the Nature of the Nervous Influence. Both the structure and the functions of the nervous system are seen to bear a striking resemblance to those of a secreting gland. We have nucleated cells, generating a new product; we have tubular fibres (answering to ducts) conveying it to its destination. That these latter should be solid and not hollow, is only natural, since the thing generated is not a liquid, but an invisible "force," *i.e.*, "an affection of matter, analogous to electricity in inorganic nature. But the third element in secreting glands is the fluid—the blood, from which they separate their peculiar product. And this too we have here in the large amount of blood—far exceeding that required for nutrition—supplied to the nervous centres, and in the distribution of much the greater part of this to the gray matter or secreting portion."

"We seem then led to conclude that the nervous system is a vast glandular apparatus, generating from the blood by its cells and transmitting through its fibre a power possessed of certain properties and uses," and this generation and transmission, "not occasioned only, on the application of stimulus, but continuous and uninterrupted." *

Nature of the Nervous Force.—"When electricity was supposed to be a material, though 'imponderable' fluid, the nervous force—its analogue in living matter, was regarded in a similar light; hence its names, 'vital spirits,' 'nervous fluid,' among the older writers. But with the tendency of modern science to *dynamical*, rather than to *material* doctrines, the nervous power must take its place with the physical forces generally as an affection of matter, rather than a separate entity." The precise mode of its operation is uncertain. Todd and Bowman considered it to be of a *polar* character, communicated from molecule to molecule of its conductor, like heat and electricity. Dr

* Dr. Hughes, British Med. Jour., June, 1860.

Wm. H. Holcombe has endeavored to show that the nervous force rather resembles light and sound, and consists in the vibrations of the substance forming the axis cylinder.*

The theory that makes the nervous force identical with electricity is in our view so far behind the present age, that we cannot devote space to it here. It merely supposes the brain to be a galvanic battery; the nerve fibres are its connecting wires (the white substance of Schwann being the isolator of the axis cylinder); and the blood the fluid whose decomposition develops electrical force. The objections to it are found in the following facts:

1. The most delicate galvanometer suffers no deflection when its wires are connected with an excited nerve. 2. The firm application of ligature to a nerve *stops* the propagation of the nervous force below the point of application, but not that of electricity. The nerve is as good a conductor of electricity after the application of the ligature as before it. The same holds good when the nerve is benumbed by ether, or paralyzed by woorara. 3. If a small piece of nervous trunk be cut out and be replaced by an electric conductor, electricity will still pass along the nerve; but no nervous force excited by stimulus above the section, will be propagated through the conductor to the parts below. 4. Nervous fibre is not so good a conductor of electricity as muscle and other tissue, and is very greatly inferior to copper and other metals.

General Pathology of the Nervous System.

The *primum mobile* of all physical action, says Claude Bernard, is seated in the nervous system. To it we owe both sensibility and motion, through which we hold all our relations with the external world. Here we see the origin and seat of all the manifestations of life; and also, here we find the source of all pathological action.

1. Beginning our examination from the highest manifestations of life and descending to the lowest, we survey in a regular series

“The mighty chain of being lessening down
From *infinite perfection* to the brink
Of *dreary nothing*; desolate abyss!
From which astonished thought recoiling turns.”

If we now review the scale of living beings by ascending from the lower to the higher orders of existence, we see as we progress that the nervous system in each animal of higher order is seen in higher degree of perfection and development. We also see that in each example of the ascending scale, diseases are more frequent than in that which is next below it, more variable in form, more complicated

* *Scientific Basis of Homœop.*

in their nature. Increased development of the nervous system is attended by increased sensibility of the nerves to external impressions, and these impressions, when felt to a certain extent, produce disease.

M. Bernard undertakes to produce all the symptoms of the various diseased manifestations of *direct irritation* of the corresponding nerves distributed to the part that is the seat of the given disease.

I. *Affections of the Respiratory Organs.*—What are the signs of disease of these organs? "Cough, dyspnoea, increase of bronchial secretion. These symptoms can all be produced at will by direct excitation of the pneumogastric nerves. Even the symptoms of pleurisy and pericarditis may be so produced.

II. *Digestive Organs.*—Exciting the solar plexus of nerves and its different branches will establish both diarrhoea and dysentery, together with the anatomical lesions that habitually accompany them.

Acute peritonitis has thus been produced, and its consequent formation of pus and false membrane have been found in the peritoneal cavity.

Fever, that essentially medical symptom, can be excited by a mere mechanical irritation of the nervous system; and the products of inflammation, as pus, false membranes and plastic exudations are called into existence in the same way.

In an animal previously enfeebled, we can produce, directly, pleuritis, or purulent deposit, by the simple division of the great sympathetic nerve. Though to succeed in this experiment it is necessary that the animal's health should previously be lowered.

Deprive a muscle or bone of its nervous supply, and you will have as a consequence, fatty degeneration in one case and rickets in the other. If you tie the nerves that enter the nutritive canals of the bone, you will soon see the cells of the lamellar structure increase in size, the vessels become more numerous, and all the phenomena of rachitis or rickets follow in quick succession. We can bring about these results in part of a bone without interfering with the remainder. This was done in the case of the lower jaw by M. Schiff of Berne.

III. *Changes in the Fluids of the Body.*—A vast number of those alterations in the fluids of the body that occur in the course of many diseases may be traced to the action of the nervous system, and can be produced by artificial excitement.

The Urinary Secretion.—Albuminuria, polyuria, and diabetes are invariably produced by excitation of definite points of the medulla oblongata; and the peculiar form of the perverted urinary secretion will be determined by the peculiar portion which is acted on.

It was formerly supposed that in diabetic patients the morbid state created entirely new conditions which gave rise to pathological productions, called sugar. It is now admitted that these phenomena are

explained by the mere exaggeration of the normal function, in virtue of which glycose is generated in every individual, even in a state of health. Disease then here is nothing more than an exaggeration of the natural function.

IV. There are however some pathological products and manifestations of disease that we have not yet been able to imitate by artificial excitation. It remains a question whether we shall ever be able to do this; and it remains the pathological problem of the day: Shall pathology ever be so perfect as to be embraced within the compass of scientific explanation, or shall there always remain here an unexplained reason; must we always refer those operations which we cannot imitate to a special principle, mysterious in its nature, which we may be content to call the vital principle?

We have not yet been able to imitate by experiment any of the eruptive fevers, as small-pox, scarlatina or measles. Are these diseases expressly the property of the human subject? or is it possible for them to be produced in animals? Each species of animal appears to have some specific diseases belonging to itself: man presents a larger number of diseases than all other animals taken together. In animals we can produce ecchymosis, congestions, and glandular swellings; tubercle, cancer, and some other morbid productions are found equally in animals and man. Now, since every disease which originates morbid tissues is evidently a perversion of the nutritive function, who can deny that the influence of the nervous function is exercised over this pathological act?

Disease does not rest upon any isolated symptom, but on a collection of symptoms. It is a morbid evolution, which offers a commencement, a middle, and an end; and a skilful and practiced observer in watching the first stage of a disease can predict its probable termination. Poisons determine real diseases which present an unbroken chain of symptoms; they therefore enable us to produce at will an entire class of diseases.

Diseases Artificially Produced in Animals.—If you remove at once the two kidneys in a dog, or simply tie one of the renal arteries, the animal is at first not seriously affected. It continues to eat and digest its food for a certain time, corresponding with the period of incubation of most diseases. But it is powerless to expel the excrementitious product which should pass out by the kidneys, and the whole system is gradually poisoned. The urea which can no longer be eliminated by the kidneys, is expelled by the intestines, and is found, with the Salts of Ammonia, among the contents of the intestines, and even in the gastric-juice. If this process could be carried on indefinitely, death would not result, as the urea does not find its way into the blood. But at a later period the poisonous urea begins to disord-

the lining mucous membrane of the stomach and intestines. This canal ceases to carry it off, performing a function altogether foreign to it. The animal is attacked with vomiting and purging, at the same time the urea finds its way into the blood, and the animal dies comatose and convulsed.

When this cessation of the urinary secretion is caused by ligature of the renal arteries, the disease caused by it may be removed or diminished by removing the ligatures. The same thing would occur in man, if there existed an obstacle to the passage of the urine, and it were possible to remove that obstacle. In all cases where the kidneys have been removed, death has followed. It seems that we can produce some diseases artificially: there are others which depend on external causes, which we have not yet learned to imitate. Small-pox and the contagious diseases must be caused by a specific contagion, which always produces the same disease. In the contagious peripneumonia of cattle it has been proved by experiment that the specific disease was transmitted to a herd of healthy cattle by permitting them to come in contact, or in the vicinity of those suffering from the disease.

Functions of the main divisions of the Nervous Tissue.—I. Of the Cerebral Hemispheres. II. The Cerebellum. III. The Corpora Striata, Optic Thalami, and other ganglia at the base of the cerebrum IV. The Spinal Cord and Medulla Oblongata. V. The Cerebro-spinal nerves. VI. The Sympathetic System.

I. Functions of the Cerebral Hemispheres (see page 695 to 699. Vol. I.)

II. *The Cerebellum.*—The relative weight of the cerebellum compared with that of the cerebrum, in man is as 1 to $8\frac{1}{2}$; in the mammalia it is still larger in proportion; but large as it is, and important as its office must certainly be, no satisfactory theory of its functions has yet been proposed.

The organ consists of two parts: 1st, The median lobe or vermiform process; 2d, The lateral hemispheres. The former of these is the primary part—it exists alone in fishes and reptiles; the lateral portions are additions to this, and denote an advance in development. They are first found in birds, and become more and more complex as they ascend through mammals to man. Its sole communication with the spinal cord is through the restiform bodies, which are continuous with its posterior columns. Injury or extirpation of the cerebellum has been supposed to affect no other function than that of co-ordination of muscular motion. The limbs retain their power, but they can no longer execute the combined movements of standing, walking, leaping, &c.

This theory based on experiments by Flourens has recently been controverted by Dr. Brown-Sequard. He says there have been many

instances of disease, even to the extent of complete suppuration of the cerebellum, in which the motorial powers have continued unimpaired. He shows that the injury of the co-ordinating power produced by wounding the organ is dependent, not on the absence of its energy, but upon an irrelative influence on the parts of the encephalon that remain unaltered; for the least irritation of several parts of the intra-cranial mass, with only the point of a needle, may generate nearly the same disorder of movement that follows the extirpation of the cerebellum. Van der Kolk shows that ample provision for co-ordination of motion is found in the arrangement of the cells of the cord; and Dr. Hughes that "section of the posterior columns, through which alone the cerebellum can communicate with the lower limbs, produces no impairment in their motorial power, simple or harmonized."

III. *Ganglia at the Base of the Brain—The Corpora Striata, Optic Thalami and Corpora Quadrigemina.*—The corpora striata are supposed to constitute the centre through which the mandates of the will, and the influence of ideas, and perhaps emotions are conveyed along the spinal cord to the muscles.* The optic thalami seem to be the point at which the mind (through the cerebral hemispheres) becomes cognizant of general impressions (as distinguished from those of the special senses.) The corpora quadrigemina are the ganglia peculiar to the sense of vision. Thus the corpora striata and optic thalami "crown, like capitals of columns, the motor and sensory tracts of the spinal cord, and, by their numerous radiating fibres bring them into intimate connection with the cerebral hemispheres, and thus with the physical powers. Being themselves closely connected, they form the centre of what are called sensory-motor actions, in which the will takes ordinarily no part; but the impression made on the sensitive nerves travels no higher than the optic thalamus, and is there passed over to the corpus striatum to be transformed into an appropriate movement. To this class of actions may be referred the vomiting excited by many sensitive impressions, the involuntary laughter produced by tickling, and the equally involuntary abridgement of the respiratory movements, when their performance is attended with pain; I say involuntary, because this abridgement often presents itself on one side only, a limitation which the will cannot imitate.

Morbid affections of these ganglia manifest themselves in derangements of voluntary motion, of sensibility, or of vision. Such affections are usually either from the pressure of an apoplectic clot, or from localized softening or other destructive disease. No drugs are yet known that act specifically upon the corpus striatum or optic thalamus;

* A case is given in Brit. Med. Jour. May 4, 1861, in which the disease limited to one corpus striatum caused simple motor paralysis of the opposite side.

those which affect them act through their action on the general cerebral structure; while those which act directly on their tissue can hardly fail to include the whole motor or sensory tract within their sphere of operation. On the other hand, the corpora quadrigemina are sufficiently independent to permit us to suppose that they may have their specific tissue-irritants. Flourens supposed Belladonna to act specifically upon them. It surely has a wide range in causing and curing derangements of vision.*

IV. The portion of the central nervous system which extends from sub-cerebral ganglia to the bottom of the spinal column, consists of three divisions : 1. The roots of the spinal nerves ; 2. The spinal cord proper ; 3. The medulla oblongata.

Roots of the Spinal Nerves.—Sir Charles Bell first proved the distinct functions of the two roots by which each spinal nerve takes its origin from the cord. He showed that division of the anterior roots so invariably paralyses the parts supplied by them, and division of the posterior roots invariably abolishes the sensibility of the same. Microscopical anatomy confirms this distinction by showing a structural difference in the fibres of the two roots, as well as in the cells of the anterior and posterior horns of gray matter in which they take their origin. Apparent objections to this doctrine are answered by Dr. Hughes.†

A. Medulla Oblongata.—The conclusions reached by Dr. Brown-Sequard, are :

1. That the irritation of the medulla oblongata and parts adjacent (as the pons varolii, cervical spine), as well as the irritation of the vagi, may suspend, or suddenly diminish, the force and frequency of the cardiac expiratory movements.

2. It is not to the absence of the medulla oblongata, but to the irritation generally produced in the removal of this organ, that we are to ascribe the diminution or complete suspension of the movements of the heart.

3. It is also in part to the irritation produced in removing the medulla oblongata entire, or its central parts (no end vital), that we are to ascribe the sudden suspension of the respiratory movements.

It is also to an irritation, and not to the absence of the medulla oblongata, that we must attribute the absence of the convulsions of agony in cases of ablation or lesion of the medulla oblongata.

Finally, we must completely reject the supposition that the medulla oblongata is the focus of a pretended *vital force*. The physiology of the medulla oblongata, considered as a respiratory centre is all to be re-made.

* Dr. Richard Hughes, *Nervous System.* London, 1860.

† British Journal of Homœopathy. July, 1861. p. 405.

B. The Spinal Cord proper.—By this term is implied the column of nervous matter which occupies the vertebral canal, up to the foramen magnum in the occipital bone.

The spinal cord consists of gray substance internally, and of white fibres externally. The gray substance is arranged in a central mass with four horns, two anterior and two posterior, from which latter the anterior and posterior roots of the spinal nerves take their origin. The white fibres lie longitudinally around the gray substance, and are separated by the horns and their issuing roots into three columns on each side, anterior, lateral, and posterior.

General Functions of the Spinal Cord.—It constitutes “the channel along which the orders of the will, and the influence of ideas and emotions are transmitted from the brain to the trunk and limbs.” Also along it travel “the impressions made on the periphery of the same parts to become sensations in the cerebrum.”

GENUS I.—NEURALGIA.

By the term neuralgia, we designate all of those painful affections, in different parts of the body, of a purely nervous character. This disease may attack every system of nerves, and every structure of the organism, whether external or internal. Different names have been given to it, derived from the particular structures affected, but as the real nature of the disease is always the same, in whatever part it may be located, and as the points of its attack are almost innumerable, there is a manifest difficulty and impropriety in endeavoring to effect a minute classification. The most common seat of neuralgia is in the first, second and third branches of the fifth pair of nerves, and in the portio dura. When the disease is confined to the facial portions of these nerves, it is recognized under the name of *tic doloureux*; when its location is in the nerves of the stomach, *gastrodynia*; when in the first branch of the *fifth pair* of nerves, *nervous headache*; when in the nerves of the feet and legs, *neuralgia pedis*; when in those of the mammae, *neuralgia mammae*; when to those of the heart, *angina pectoris*, &c. But as these various names only complicate our classification, and render complex what is in reality simple, we shall treat of all these nervous attacks under the general appellation of *neuralgia*.

NEURALGIA.

Neuralgia may be divided into: (See a paper by H. Lubb, Esq., Harviean Society—*Lancet*.)

1. Central.—Arising from Disease of the Brain or Spinal Cord;
2. Peripheral, divided into

a. Idiopathic.
b. Traumatic.
c. Neuromatous.
3. Reflected.

II. a. Idiopathic Peripheral Neuralgia.

Description.—Stabbing, darting pain referred to the course of a nerve, shooting down the nerve like lightning; coming on suddenly lasting but a moment, and repeated at intervals. The pain is so acute as to be unendurable if continuous. The part or limb affected with this form of neuralgia is colder, and the skin supplied by the neuralgic nerve is more or less numb, not tender to the touch. The patient likes to have it rubbed, and frequently grasps it with the hand and presses it. If the neuralgia has lasted any time, there is more or less paralysis in the muscles supplied by the accompanying motor nerve.

The nerve force is believed to be generated and distributed from the capillary circulation. The sentient nerve is a conductor to the brain of sensations taking place at the periphery.

Neuralgia is therefore not a hyperesthesia of its healthy function. During health a nerve has no sensation proper in itself, and if it be struck, cut, or torn, the sensation is referred to parts to which the nerve is distributed. But in this form of neuralgia it is the nerve itself to which a pain is referred as darting up and down its course. A sentient nerve may be likened to an iron conducting-wire of a galvanic battery, which, if of a certain uniform diameter, indicates a given quantity of galvanism without being perceptibly affected by its passage. But if a portion of the wire be much finer than the rest it becomes red-hot, being unable to conduct the whole of the galvanism; the remainder is correlated into heat. So in the nerve; from mal-nutrition it is unable to conduct normal sensations to the brain. The nerve current, by effecting a polarity of the nerve itself, gives the idea of pain in that portion of the trunk of the nerve, its peripheric termination being at the same time numbed. It is therefore considered that the indications of cure consist in increased healthy circulation, arterial and nervous.

DIAGNOSIS.—The following are the general characteristics of neuralgia: Sudden paroxysms of exceedingly acute pain in some particular nerve, with violent lancinating pains extending along the ramifications of the nerve in different directions, attended with turgescence of the blood vessels in the vicinity of the part chiefly affected, but without fever. The pains are so sudden and severe as to resemble electric shocks, and they often give rise to spasmodic contortions or twitchings of the muscles of various parts of the body, and especially of the muscles of the face, when the branches of the fifth and the facial

branch of the seventh pair of nerves are the seat of the pains. The pains are sometimes aggravated by the slightest movement, or by the gentlest touch, although *firm pressure causes no pain*. The particular nerve or nerves involved, can always be pointed out with exactness, because the principal seat of the attack is always in some portion of a nerve, and the pain radiates thence along its different ramifications; and from this circumstance surgeons have occasionally excised with success portions of nervous trunks to effect cures; but this severe measure should never be resorted to when suitable homœopathic specifics can be readily procured. Our esteemed friend Dr. Carnochan, of this city, has in several instances excised portions of the branches of the fifth pair of nerves, for the cure of obstinate facial neuralgia, and always with success. But the resources of homœopathy should be exhausted before resorting to the surgeon's knife.

In facial neuralgia, there are often lachrymation; increased flow of blood; spasmodyc twitchings of the mouth, cheeks and eyelids; spasmodyc closing of the eyelids; unusual heat and tension in the side affected; stiffness in the jaw and neck; increase of pain by light, noise, motion, touch, talking, or eating; heat or coldness of the body; vertigo; and confusion of ideas.

When the head is the seat of the attack, we may have violent periodical pains in some part of the head, darting along the nervous ramifications; nausea; vomiting; extreme sensitiveness to the touch, cold air, sounds, and light; humming in the ears; sense of heat and fullness in the affected part; floats before the eyes on the slightest attempt to use them; aversion to food; confusion of ideas; disinclination to converse or to listen to others.

When neuralgia affects the superior or inferior extremities, back or mammae, the symptoms will be fewer, on account of the less number of sympathetic connections existing between these parts. In these instances, the violent lancinating pains occurring in paroxysms, and increased by the slightest contact, and by motion, and unaccompanied with actual inflammation, are the symptoms which especially mark the complaint. A most distressing form of neuralgia has occasionally come under our observation, which seems to pervade the whole body—and is characterized by painful spasmodyc twitches, or jerks, occurring at short intervals, sometimes affecting the lower extremities, then suddenly shifting to the upper limbs, the face, neck, or chest. We have generally witnessed this form of the malady in elderly persons of weakly constitutions; but in a few instances in young inebriates.

For the symptoms of neuralgia affecting *internal organs*, we refer the reader to the articles *Gastrodynia* and *Angina pectoris*.

CAUSES.—Pathological researches have as yet thrown but little light upon the nature of neuralgia. Many excellent observers have institut-

ed rigid autopsical examinations, in order to ascertain its precise nature and location, but their labors for the most part have proved fruitless; since no lesions or other marks of diseased action have been discovered, either in the nerves or their envelops, at all sufficient to account for the symptoms. Dr. MacCulloch believes neuralgia to be a *malarious* disease; this opinion is founded upon the fact of its frequent occurrence in marshy districts, and in locations where intermittent fever abounds. It is probable, however, in these cases that the miasmatic influence operates merely to *excite* or to call into active operation a diseased condition of the nerves, latent, it is true, but already existing. The malaria operates in these instances, as *the immediate exciting cause*, and in a manner similar to impure air, errors in diet, excessive mental and physical labor, abuse of narcotics, or stimulants, over-excitement, fatigue, exhaustion, great loss of fluids, and the depressing emotions. The remote cause and the real nature of the disorder remain unexplained. A conclusive fact in refutation of the views of MacCulloch respecting the malarious origin of the disease is its common occurrence in New England, where intermittent fevers do not prevail.

Neuralgic pains sometimes arise from the pressure of tumors, and exostoses, the irritation of decayed and ulcerated teeth; and also from mechanical injuries. In these instances we may generally remove the cause by surgical means, and thus cure the disorder.

The upper and anterior portion of the external ear and auditory canal derive their sensibility from *the fifth cerebral nerve*, which has direct nervous associations with the interior of the head, the forehead anteriorly, the temple, face, eyes, nose, teeth, and tongue; whilst the posterior part and anterior part of the pendulous portion of the external derive their sensitive supply from the spinal nerves issuing from the spine between the second and third cervical vertebræ. If then, the pain be in one part of the ear, it is probably of a neuralgic character, connected with irritation of the fifth pair of nerves, and there is, from this cause often simultaneous concurrence of tooth-ache and ear-ache, as the same nerve that supplies the auditory canal also supplies anterior portions of the ear. Also pain in the anterior third of the tongue is a common cause of pain in the auditory canal.

A physician suffered from an enlarged gland below the external ear, and had also a slight discharge of morbid secretions in the auditory canal. It was thought to originate in irritation from a decayed tooth; a decayed tooth was extracted, and the local symptoms ceased.*

Case by Dr. Crane.—A woman had been afflicted with neuralgia for three years. A New-York dentist removed a number of teeth, which

* Dr. Hilton. Lecture on Pain. *Lancet*. 1860. p. 489.

were probably the exciting cause; but this gave no relief, and the patient was confined to the bed for a week or more at a time, rolling from side to side of the bed in the greatest agony, only mitigating the pain by large doses of Laudanum, and wishing for relief by death. Leeches were applied in great numbers, and Carbonate of Iron was given at the rate of one ounce a day. Relief was partial but in two weeks the pain returned, but more deep-seated. The antrum maxillare was punctured, the iron resumed. The relief was more permanent.

In many cases of neuralgia of the face or parts adjoining, the physician fails to cure because he fails in detecting the cause of the disease. A single decayed tooth, though not painful itself, is often the source of irritation from which all the pain proceeds. Every diseased tooth must be removed, and especially all old stumps, and the tartar from the remaining teeth. So long as there are inflamed spongy gums, with old offensive stumps imbedded in them, the general health must be bad, digestion deranged, and severe nervous pains will be felt in some of the branches of the fifth pair, to which they are continually radiating from the diseased point.

PHYSIOLOGICAL CHARACTERISTICS OF NEURALGIC AFFECTIONS.—1. They are seated in the peripheral system of nerves; we have cerebral, spinal, and ganglionic neuralgia. 2. Every neuralgia consists of a series of paroxysms of different durations, separated by irregular intervals of ease. 3. The pain varies; it is tearing, stitching, burning, &c. In neuralgia of the central nerves the pain is directed from within, outwards; in those of the ganglionic nerves it runs from the periphery towards the centre. 4. The volume of the affected organ decreases. 5. The temperature of the organ decreases. 6. Discoloration takes place, the affected part becomes paler. The urine becomes paler, losing its characteristic pigment. The artery becomes thinner, and contracted, in proportion as the volume of the affected part decreases; the current of blood is smaller, it rushes along with less force, though not always with less rapidity. (*Chronic Diseases*, 4. 22.)

Neuralgia occurs in all climates, and has been observed at all periods since the days of Hippocrates. It is more frequent among women than men, and also more common after the age of puberty. We meet with it in its strictly periodical form in patients who have not been exposed to malaria.

I. NEURALGIA FACIALIS.—Tic-Doloureux.

This form of neuralgia was first fully described by Dr. Fothergill, afterwards by André, Darwin, Heberden, and later writers.

The name Tic-Doloureux was first applied by M. André, of Ver-

sailles. It is expressive of those severe twitching, throbbing, or oscillating movements or spasms in which the patient feels as if there were something moving in his cheek, oscillating like the pendulum of a clock, and, from the proximity of the ear, actually sounding. Many speak of it as sounding "tic-tic." This sound perhaps arises from the implication of the auditory nerve in the deceased action; as flashes of light are seen in the eye when the nerves of the eye are disturbed (*Morgan, Brit. Jour. Homœop.* 1855.)

"Tic-douloureux occurs in paroxysms, at irregular intervals; the attack is sometimes preceded by oppressive anxiety, itching, or feeling of coldness on the part to be attacked, formication and trembling of the eyelids, tension in the palate and nose, numbness of the tongue, &c. At first the pain is inconsiderable, like a mere prick, or a common toothache, but gradually it becomes more violent and piercing; the pain is lancinating or tearing, dragging or pressing, beating, boring, frequently accompanied with a sensation as if the face would be cut or sawed to pieces. The pains either follow the course of the different branches of one side of the trigeminus (more frequently on the right than the left side of the face,) or exclusively the one or the other branch of the nerve. If the pain be seated in the supra-orbital branch, it generally commences at the foramen supra-orbitale, shooting to the eyebrows, forehead, eyelids, and frequently, deep into the orbits; if the infra-orbital branch be the seat of the affection, the pain spreads over the cheek, upper lip, lower eyelids, radiating to the teeth, palate, and tongue. A neuralgia of the infra-maxillary branch extends to the lips, alveolar processes, teeth, to the soft parts under the chin, and the side of the tongue. Frequently the pain seems to follow the ramifications of the pes-anserinus, spreading even to the temporal region; least frequently the pain is seated in the lingual branch, and most frequently in the superior maxillary, and frontal nerves."

"Reflex phenomena in the motor nerves: the muscles of the affected side of the face twitch involuntarily, the eyebrows are knit, and the eyelids close spasmically, the corner of the mouth is drawn towards the ear, and the spasm extends even to the respiratory muscles; the contractions exhibit the forms of oscillating movements, or of clonic spasms, or they are tonic, and of the nature of trismus; the jaws are locked, as in tetanus, during the attack." During the paroxysm there is redness, puffiness, and sometimes paleness and blueness of the affected side of the face, caused by excitement of the vaso-motoric nervous fibres. In some cases the cheek becomes œdematos, and collapses after the paroxysm passes. The arteries of the affected side pulsate more strongly, and the veins swell. When the ophthalmic branch is the seat of the affection, the conjunctiva becomes red, and the tears flow

profusely; in neuralgia of the maxillary branches the salivary secretion is increased.

When the attack is violent it is usually of shorter duration, sometimes only a few minutes, rarely over fifteen. The intervals between the paroxysms may last for hours, days, or even months, during which there is entire freedom from pain. The paroxysms usually increase in frequency from the time of their origin; and after some years the pain is seldom perfectly absent. During sleep the attacks of pain seldom occur. (*Hartmann.*)

The affected nerves are sometimes so sensitive that the paroxysm is excited by the least emotion, contact, pressure, exposure to cold air motion of the facial muscles by talking, chewing, yawning, sneezing, or even by merely thinking of an attack. (*Hartmann.*) We have seen in one case the most dreadful paroxysms excited in a lady by a fly lighting on the side of the face. Cannstatt says amusement may keep off the paroxysm for a time.

DIAGNOSIS.—Distinguished from sympathetic affections by its being “confined to a certain distribution of nerves; its occurring in paroxysms separated by free intervals: in sympathetic pains there is change of seat, and extension of their range, and the pain is a mask to some other complaint, such as disease of the facial bones; when this becomes worse, the facial pain increases in a corresponding ratio. In a case detailed in Vol. X. of the *Jour. de Médecine*, the disease originated in a wound of the arm, and was cured after two years spent in torture, by cauterization of the cicatrix. The case quoted from Swan (p. 21), is of an analogous character.” In true neuralgia of the fifth pair of nerves the sensibility to slight contact is exquisite; whereas strong pressure may even diminish the pain. This disease is extremely rare and confined to persons who have passed the thirty-fifth year. In anaesthesia dolorosa of the fifth pair the painful surface is insensible to irritation; in tic-doloureux the surface is morbidly sensitive to contact. (*Romberg, Diseases of the Nerves.* Vol. 1, p. 49.)

CAUSES.—Tic-doloureux like nearly all nervous affections is hereditary; is most common among females, near or past the middle of life; it is developed by constitutional nervous irritation; chlorosis, hysteria, hypochondriasis; frequent and strong mental emotions, as chagrin, grief, care, &c.; all menstrual irregularities; losses of blood or other debilitating discharges; malaria. Local causes: wounds, contusions, &c., affecting the nerves; splinters and other foreign bodies ulcers; abuse of washes containing poisons; affections of the teeth and abdominal organs; suppressed chronic eruptions, as itch, herpes, suppression of habitual discharges; arthritis; psoric, carcinomatous or syphilitic dyscrasia. The chief cause of this disease is atmospheric change—from heat to cold, moist and dry. The face is imperfectly

protected. Mental emotion often powerfully affects the nervous system of the face. In no disease is the face the index of internal disease so perfectly as in neuralgia. The pain speaks plainly and feelingly for itself. (*Morgan.*)

PATHOLOGY.—*Tic-douloureux* is essentially an affection of the terminal branches of the fifth pair of nerves—the *trifacial*. This nerve arises by two roots from a tract of yellowish white matter in the front of the floor of the fourth ventricle. It passes forward to the petrous portion of the temporal bone, where it spreads into the *gasserian ganglion*. This ganglion divides into three main branches: the ophthalmic, the superior maxillary, the inferior maxillary. The first gives off nervous filaments called the frontal, lachrymal and nasal, besides other fibres to parts surrounding the orbit. The superior maxillary passes forward, and leaves the cavity of the cranium through the foramen rotundum. It leaves the spheno-maxillary fossa, passes through the canal in the floor of the orbit, and emerges at the infra-orbital foramen, where it divides into branches to supply the muscles and integuments of the face. This nerve gives off in its course orbital, dental, muscular, and cutaneous branches. While crossing the spheno-maxillary fossa it receives two ascending branches from Meckel's ganglion; by which branches the nerves of the face communicate with the great sympathetic tract. The third, or infer-maxillary, leaves the cranium by the foramen ovale, and divides into the internal and external branches; the first gives off four or five filaments which are distributed to the temporo-maxillary region, consisting of the masseter, temporal, buccal, &c.; the internal divides into the gustatory, infer-dental, and anterior auricular (*Morgan.*)

Other nerves often become involved in facial neuralgia. The *portio-dura* of the seventh pair is often affected, either by the exciting cause or through the proximity, intertwinnings and inoculations that exist between this and the facial nerves.

Romberg says, "There is no nerve of sensation whose activity is so frequently called into play as the trigeminus; the number of filaments at its point of insertions, allows the assumption that its cerebral connections are the most extensive of all. This accounts for the frequency and ease with which sympathetic affections are excited in the nerve, and for the difficulty of distinguishing them from genuine neuralgic conditions. (*See Diagnosis.*) There are cases in parturient females which exhibit the true neuralgic character; and yet, which terminate the moment parturition is passed. (*Hunt, Brit. Jour. Homoeo.* 1855. p. 589.) In some the pain in the face or temple is synchronous with the uterine contraction; in others the uterine contraction alternates with neuralgic pain in the face or head, in others again the normal contraction ceases suddenly, and puerperal convulsions supervene.

The disease is *constitutional* when it attacks the system generally or some remote part without apparent cause. *Local* when seated in or near the affected part irritated by some foreign substance.

1. Local Neuralgia. The infra-orbital nerve is generally the seat of this painful disease. The character of the pain is peculiar, and its course corresponds exactly with that of the nerves. The second branch of the fifth pair appears to be most commonly affected. The second and third generally partake of the disease in its severer forms. In some persons the forehead, temple, inner angle of the eye of the side affected and even the eyeball become the chief seats of pungent agony; while from irritation of the lachrymal gland the eye weeps involuntarily. It has often resisted medical treatment for years, continuing unabated after division of the affected nerve.

The branches of the facial nerve, and also the different ramifications of the fifth pair are the common seat of neuralgia; but it is mainly through the agency of the latter that the *portio dura* becomes sensitive. Recent experiments have proved beyond a doubt that the sensibility of the facial nerve is not inherent to it, but borrowed; for irritants applied to the facial nerve within the cranium, before its entrance into the auditory foramen, give rise to twitchings only, and not to pain.*

When pain is experienced around the alæ nasi and lip, the branches of the superior maxillary are those involved. Pain darting across the forehead from the superior and inferior part of the orbit, indicates a derangement of the supra and inferior orbital nerves. If the loss of sensation affects a portion of the facial surface together with the corresponding facial cavity, the disease may be assumed to involve the sensory fibres of the fifth pair before they separate to be distributed to their respective destinations.†

Prognosis.—This disease is not dangerous, but recovery is slow, varying according to its duration, the manner of its origin, and age of the patient. It is more curable when from a rheumatic or malarious source than when connected with gastric derangement. Still more obstinate are those from suppressed impetigo, gout, or cachectic diseases. Cases depending on organic alterations of the nerves, brain, and bones are generally incurable. Those are doubtful also in which the attacks succeed each other rapidly. Tranquillity of mind, absence of care, a confident, quiet mood, and intellectual amusements, facilitate recovery. (*Hartmann*, p. 26.)

Treatment.—The principal specific medicines for the cure of neuralgia, are: *Arsenicum*, *Belladonna*, *Colocynth*, *Nux-vomica*, *Aconite*, *China*, *Arnica*, *Bryonia*, *Calcarea-carb.*, *Hepar-sulph.*, *Phosphorus*, *Acid-hydrocyanic*, *Pulsatilla*, *Sepia*, *Sulphur*, *Spigelia*,

* Romberg, p. 31.

† ibid. page 214.

Stramonium, Mercurius, Sticta, Pulmonin, Cannabis-ind., Codeine, Opium, Ignatia, Agaricus-musc., Hyoscyamus, Chamomilla, Apis, Cedron.

In all its forms neuralgia generally requires large doses of the specific medicine, including the numerous elements that arise from nervous irritations and intermittent diseases, especially fever and ague.

Aconite.—Inflammatory neuralgia of the fifth pair; pain continuous, throbbing, stitching in the nerve and surrounding parts, with alternate heat and chilliness; rheumatic cases, with intolerable pain, burning, tingling, stitching in the paroxysms, with great nervousness, as if occasioned by an internal ulcer. Morgan gives a case of neuralgia of the three branches of the fifth pair, and portio dura of the seventh in a lady aged forty-two, who had been treated by other systems of treatment for eight or ten years without relief. Pain confined to one side of the face, arteries throbbing furiously, eye sparkling, protruding, conjunctiva engorged, pain producing hideous contortions of features, bounding, buzzing pains shoot through the ear, to the temple and side of the neck, followed by profuse salivary discharge, head and articulation of lower jaw fixed; gastric derangement, constipation, fever. She was relieved by Aconite followed by Sulphur, and the dyspeptic symptoms disappeared.

Aconite is the specific remedy for neuralgia, according to Hempel.

Aconite may often be employed with great advantage in neuralgias accompanied by great erethism of the vascular system, flushes of heat, congestion of the head, chest, and heart. Whenever the function of the heart appears to be affected in neuralgia, this remedy will generally prove useful.

Belladonna.—This medicine is well adapted to the "diseases of women and children, whose nervous systems are in a state of erethism." The external indications are: sanguine and choleric temperament; general appearance indicative of a full and plethoric habit; cheeks red and swollen; eyelids spasmodically closed; spasms and startings in different parts of the body; distortion of the face; trembling and frigidity of the limbs.

Great sensitiveness to cold air and light; headache, compelling to close the eyes; acute throbbing pains in the forehead; semi-lateral headache; pains aggravated by movement, noise, light or cold air; lancinating pains in the orbit; spasms of the eyes; violent stitches in the parotid gland, extending to the external and internal ear; roaring in the ears; paroxysms of tearing, digging toothache; toothache of pregnant females; neuralgic pains darting from the side of the face to the teeth and ears, of a tearing, or lancinating or digging character, with heat and redness of the part affected; toothache occurring after eating, from contact with cold air, from study, from pressure upon a de-

cayed tooth, from eating, and from swelling and ulceration of the gums; darting pains in the lower jaw and in the glands of the affected parts from a decayed and hollow tooth; toothache with drawing in the ear; neuralgia affecting the crural nerve; cutting, darting, and tearing in the left thigh when sitting; lancinating pains in the right thigh when sitting; tearing and lancinating pains in the region of the tibia, extending to the calf of the leg and sole of the foot; neuralgic pains in the back and shoulder.

Anguish; despondency; great irritability; vertigo; confusion of ideas; delirium, inclination for firm pressure upon the head, which affords relief, while slight touches increase the pains.

Inflammatory and nervous cases with paroxysms of long duration, commencing with a troublesome itching and titillation in the affected part, changing to violent lancinating pain, or aching, crampy tearing, drawing pain in the malar and nasal bones; the pain is always seated on one side; often it follows the course of the infra-orbital nerve, when it changes to intolerable, violent, cutting pain; it is frequently accompanied with increased secretion of tears and saliva; also stitching and tensile pains, with spasmodic closing of the jaws, and painful stiffness of the neck.

Administration.—A drop of the second or third dilution on sugar or water every half hour, until a decided impression is produced.

Morgan gives several cases of neuralgia cured by Belladonna. The pain in all was seated in the maxillary branches of the fifth pair; and in some involved the portio-dura of the seventh pair, being confined in all cases to one side. In some the pain was mitigated the first day. In some other remedies were alternated with the Bell. In one case galvanism, iron, quinine, chloroform, morphia had been tried without benefit. Bell. 3, gave some relief but failed to cure, though nearly all the symptoms above given of this remedy were present. As the patient lived in a malarious district, Arsenicum 3 was alternated with the Bell. every twelve or twenty-four hours for some weeks. This led to final recovery.

In a large proportion of cases usually treated as neuralgia and confined to the fifth pair of nerves, we have succeeded by giving Aconite, of the third, fifth, or higher potencies alternated with Bell., of equal strength, and have generally repeated the remedies at short intervals, of one, three or more hours. In other cases pursue the Aconite alone for some hours, following it with Belladonna in the same way.

Coffea, Coffee.—Coffee, says Dr. Teste, "is responsible for perhaps six or seven-tenths of the neuralgias we have to treat daily." That it does cause this morbid condition of the nerves is certain. That it does not do so in all is only explained by referring individual peculiarities to some characteristic idiosyncracy peculiar to each individual. Of

this Teste says: "Notwithstanding the divided idiosyncrasies in the human species, with very rare exceptions, the action of each drug varies rather by the intensity, than by the form, of the symptoms that reveal it. 2. The Hahnemannian dynamization of medicines has the virtue of disengaging their powers, and of giving to their proper or primary actions the ascendant over those which consist only in simple reactions of the organism. Thus: "I have seen patients unaccustomed to coffee, unconscious of any kind of sensation from it, and who continued to drink it during their treatment, highly susceptible, nevertheless, to crude coffee in the sixth or twelfth dilution. 3. The degree, however variable of susceptibility to the action of drugs, or to some peculiar drug, does not impair the justice of the fundamental law of homœopathy. Thus, Hahnemann, with his admirable acumen, seized and interpreted those individual symptomatic shades, always independent of the drug experimented upon, and in which I had long apprehended an infirmity in our doctrine. Hahnemann, on the contrary, enlightened by clinical experience discovered in them the general relations of each drug or group of drugs, with a certain physiological personality, sex, temperament, color of the eyes and hair, moral propensities, (&c.)

Tobacco.—Dr. Van Archen of Bogota, New Granada, says there is a peculiar kind of neuralgia which occurs only in people who have worked for years in tobacco factories, and are also habitual smokers. In these the body becomes so thoroughly saturated with nicotin, that occasional twitching of the muscles of the face occurs, which ultimately becomes an agonizing pain, making the patient scream in horror. He found numerous instances of it in San Domingo, San Salvador, and Ambalema, all tobacco countries. No antispasmodics or narcotics were found to palliate but rather to aggravate the pain. (*Am. Medical Monthly.*)

A deranged state of the digestive organs is a universal attendant on this disease. Sometimes the masses of medicines given to restore the digestion to a healthy state become transformed into new substances by the deleterious gases formed in the decaying teeth and gums. It is then indispensable to remove the old stumps and cure the offensive ulcerated gums before the digestion can be restored or the symptomatic neuralgia cured.

Arsenicum.—Temperament, leuco-phlegmatic, lymphatic or biliary and choleric or nervous, with disposition to melancholy; general appearance of debility and exhaustion; countenance pale and sunken, or bloated and red; features distorted, lips bluish; twitchings of the muscles of the face, lips and eyelids; tongue white; coldness of the extremities; anasarca; emaciation; trembling of the limbs; cramps in the extremities; pulse small.

Paroxysms of excruciating pain in the head, particularly in the fore-

head over the root of the nose,—over the left eye,—in one side of the head,—in one eye: pains aggravated from the slightest movement or touch; scalp sensitive to touch or motion of the hair; roaring in the ears during the pain; mouth dry; thirst or adypsia; bad taste in the mouth; aversion to food; nausea; eructations; hiccup; pressure, heat or burning, or cramp-like sensations in the stomach; drawing and cramps in the arms and legs; cramps in the fingers; rigidity of the hands; violent lancinating pains in different parts of the body, aggravated by movement or touch, attended with paralytic weakness, contractive sensations, faintness, coldness, shuddering and trembling.

Fits of violent anguish; fear; dread, with tremors; impaired memory; inability to think or collect the thoughts; dizziness; vertigo; general uneasiness.

Administration.—A dose of the second or third trituration, every half-hour, until an aggravation or amelioration of the symptoms occurs.

Rhus-tox.—Tearing, or jerking, or prickling, or drawing, or sticking pains in the extremities, accompanied by stiffness or lameness, or numbness, and sometimes followed by a paralytic condition of the affected parts. *Causticum* presents a similar group of symptoms, and may be employed when *Rhus.* does not respond satisfactorily.

Agaricus-musc.—Spasmodic, or cramp-like pains in the limbs, worst when the body is at rest, relieved by motion, and the pains changing from side to side. Drawing or stitching pains in the head, shifting from side to side.

Conium-maculatum.—Jerking, or cramp-like, or spasmodic, or pulsative pains in the back, or chest, or jaws, or the upper and lower limbs, with great depression of spirits, lassitude, and sense of exhaustion, worse during the night, and when at rest.

China.—Neuralgia of malarious origin, “stitching pains with pressure, or fine beating pains in the right malar bone and right side of the nose, aggravated by contact,” or increased to a frightful degree by it; nervous and rheumatic neuralgic pains; stitching pains in the malar bone which disappear by pressure; tearing with pressure, and cutting, burning in the upper-jaw. (*Hartmann.*)

The true sphere of *China* is the *periodic*. The attacks which are strictly *periodical*, recurring at a certain hours each day, or each alternate day, are perhaps always of malarious origin. In these, when not complicated with decayed teeth or pressure of bone on a nerve, we have always succeeded with Sulphate of Quinine in one-grain doses, repeated every two hours. There are some forms of congestive malarial fever in which neuralgic pain of the face or temple is the most distressing symptom in which quinine *alone* is not successful. (See Vol. I. p. 490, under *Intermittent Fever*.)

Neuralgia.—Intermittent form.—Remedies: *Chin., Ced., Ars., Op.*

Cedron. Neuralgia coming in regular *periodical* paroxysms. It is, says Dr. Casanova, one of the drugs which should be administered as a *unit* or single dose, either as a curative or prophylactic force, and not to be repeated, except at long distances from the first. One single dose of the potency suitable to the individual respectively will always be quite enough to produce the desired effect; whereas, if several doses be given, at short spaces from each other, to persons of great impressibility, they will surely aggravate the case, and perhaps produce pyrexial attacks, as I have often seen." One grain at a dose of the 3° decimal has often succeeded in periodical tic, or prosopalgia

Sanguinaria, 200°, according to Dr. Wolf, "is the remedy for that severe one-sided headache extending into the sinus frontalis, which quinine never cures. Corrosive sublimate removes it quickly; but it generally returns after some time in an aggravated form."

Veratrum.—Pain drawing and tensive, spreading over the right half of the face; recurring in paroxysms; slight delirium; the part swells after cessation of the pain.

Spigelia.—Intermittent and nervous prosopalgia, deep-seated in the orbit, making the eyeball appear too large, especially when moving the eyeball or facial muscles; intense painful pressure, and digging stitching in the ball. The prosopalgia, properly so called, is characterized by pressure and burning, particularly in the malar bone; all motion or contact, anguish of heart, great uneasiness, and pain felt only on one side.

Colocynth.—Dr. Watzke remarks as follows respecting the therapeutic action of *Colocynth* in neuralgic affections: The curative sphere of *Colocynth* in the new system is almost confined to a few *neuralgias* and *hyperasthenia*, and of these, almost exclusively those which affect the *trigeminus*, the *cæliac plexus* and the *lumbar* and *femoral nerves*. First: the hemicrania and prosopalgiae which *Colocynth* cures, proceed from an exaltation of sensibility, dependent on rheumatic, gouty, or gastric irritation, or on congestion of the fifth pair of nerves, in all cases on a purely functional affection of the sensitive filaments. *Colocynth* is of no use in organic prosopalgiae, from growing out of the teeth, hypertrophy of the bones of the skull or face, tumors, &c.

"Second: The neuralgia of the *cæliac plexus* and its branches, are particularly likely to be quickly and permanently removed by *Colocynth*, when they occur as substantive affections, not caused by derangements of the stomach, but by cold, vexation, or anger, occurring during the period of evolution; complicated with spinal irritation and neuralgia of the great nerves of the thigh, with haemorrhoids, chronic diarrhoea or vermicular symptoms."

Colocynth is adapted to dry, biliary and choleric-melancholy temperaments. It is especially suitable in cases of neuralgia confined to certain parts of the *left* side of the body. The paroxysms are usually

attended with spasms, twitchings, and contractive sensations; and the lancinations are sudden, violent, and extend to a distance from the starting point.

Administration.—A drop of the third dilution of water, every hour, until its effects are apparent.

Nux-vomica.—Temperament sanguine or choleric; disposition lively artful and malicious; face pale or highly colored; contractions of the hands and feet; coldness of the body, especially after drinking; trembling of the limbs; fainting fits; spasmodic twitchings in different parts of the body; better adapted to *males* than *females*.

Periodical and intermittent pains; excessive sensibility of the affected parts to external impressions of all kinds; periodical headache every morning after rising, increasing until noon, then gradually diminishing until night, when the pain ceases; the pains are drawing, tearing, compressive, affecting the whole head, or forehead, or the part just above the root of the nose; headache, accompanied with confusion of ideas, nausea, bitter eructations, vomitings, constipation; scalp painful and sensitive to touch or cold air; tearing pains in the facial and infra-orbital nerves; ringing in the ears; toothache in sound and decayed teeth; pains of a sticking, drawing, tearing, jerking, or digging character, aggravated by cold air and drinks, by study and meditation, and relieved by rest and warmth; toothache from cold, and from extraction of a tooth; swelling of the gums; drawing toothache in a hollow tooth, with pains attended with violent, cramp-like contractive and tearing pains in the stomach; pleurodynia; contractions and cramps in the hands, feet, and limbs; coldness of the hands and feet; painful contractive sensations throughout the body; faintness; languor, and indisposition to mental or physical exertion; great sensitiveness to external impressions; melancholy; sadness; apprehension; anxiety; petulency; indisposition to mental exertion.

Administration.—This medicine may be employed in the same manner as *Belladonna*.

When neuralgia has arisen from excessive loss of the fluids of the body, we may refer to *China*, *Phosphorus*, *Calcarea*, *Carb.*, *Sepia*.

When the disease appears to be connected with scrofula, exostoses of the bones, chronic cutaneous affections, abuse of mercury, constitutional syphilis, glandular and other tumors, reference should be made to *Sulphur-mercurius*, *Hepar-sulph.*, *Sepia*, and *Aurum-muriaticum*.

In neuralgic attacks of the heart or stomach, or uterus, our best remedies are *Nux-vomica*, *Acid-hydrocyanic*, *Pulsatilla* and *Colocynth*.

Neuralgia from mechanical injuries, will commonly yield to *Arnica*, *Aconite* and *Calendula*.

the following symptoms perfectly, and refer to the following symptoms of this disease:

These should be examined precisely, and the physician will know. When the patient has been lying down until relief comes, it induces us to discon-

M. Iridi, gives some account of it. It may yet become as well known, when it was said to Dr. Boenninghausen who happened

to have "acute inflammation of the eye, with a sensation of heat, excessive photophobia, and agglutination of the eyelids; pain, which increases over all the day, or three, p.m. is at its height, or even lying down

of Chelidonium in neuralgia of the right side. Boenninghausen has fully shown on the subject. He has seen its effects

on the skin, gray eyes, and mucous membranes. He felt in the right eye, gradually increased until it became red, and became tearing, watery, and excessively contracted. Pressure caused great movement, and free yawnings and shiverings during the attack on the second day afterwards, but without return after, for a long time.

That Chelidonium is a powerful remedy, is well known.

J. Homœop., Jan., 1842.

"most useful remedy for removing neuralgic pains of the eye-brow and temple, especially of the right side, but sometimes of the left," that it is applicable to all ages, sexes and temperaments, at short intervals, between the paroxysms. The characteristics of the pain must be generally pulsative and burning, or less frequently lacerating and tearing. The attacks are periodic, preceded generally by yawning and shivering, occasionally continued during the paroxysm, and terminating most frequently by perspiration, sometimes sour. It "always begins in the eye-brow and temple, extending chiefly, in proportion as it becomes more intense, to the forehead, the orbit, and the eye of the same side; the eye becomes injected, at times prominent, and very sensitive to light." Pressure with the hand "relieves the pain slightly; while light, fresh air, movements of the head, especially stooping, aggravate it."

Galvanism.—Mr. Lubb regards Pulvermacher's chain as the only apparatus that can be adapted to the surface of the body, and capable of generating a sustained current, producing a continuous current of galvanic electricity of one uniform direction, mild, yet sufficiently energetic for medical purposes; strong enough to decompose wire, excite contractions of the muscles, &c. He regarded it as specific. Immediately upon adapting the exciting chain to a part, the patient is aware of the presence of the life-giving agent, and immediately says he is relieved. The neuralgia disappears, and sensitiveness of the surface returns.

Electro-Magnetism.—(See Paralysis.) Case by Dr. H. Lassing, of New-York. Madame C., aged 48; general health good, but of a delicate habit; was afflicted with neuralgia, seated in the brachial nerves, for three years, evidently owing to a blow from a falling brick she had received on the shoulder. Partial paralysis of the arm had also taken place. The positive pole was applied, through a wire brush, along the course of the external branches of the nerves of the arm downward, and in one direction only for fifteen minutes each day. Conium was applied externally, mild purgatives and Cinchona and Gentian given internally; after eight applications this patient entirely recovered the use of the arm, and has ever since been free from pain.

In rheumatism, "in conjunction with constitutional treatment, I pass a current through the affected parts. If the current is direct, it soothes and relieves the pain; and when the to-and-fro current is used, it stimulates and warms. I have found it the best local application, with the quickest results."

Cannabis-sativa.—Dr. Quin says that when neuralgia arises from a disordered uterine system, *Cannabis*, *Ignatia*, *Pulsatilla*, *Thuja*, and *Veratrum* are specially indicated. He gives a case: (*Brit. Jour. Homœop.*, Vol. IV.)

"A woman suffered from neuralgia; the pain which was in the cheek, was like that of a violent and repeated pressure from a blunt instrument. The attacks were accompanied by sickness and nausea, and violent vomiting came on in two hours before the cessation of the paroxysm. During the attack, large flow of light-colored urine; flatulence, distention of the abdomen and borborygmi; face pale and sallow; she is very weak, tongue tremulous; catamenia much too profuse almost amounting to flooding, and continuing ten or twelve days. Cannabis-sativa 30° was prescribed. Improvement followed in a few days; catamenia occurred rightly, as to quantity, &c., for the first time in twelve years. A few doses of Aconite and Chamomilla subsequently required for diarrhoea, but Cannabis alone sufficed for the cure of the affection." The case was considered one of "neuralgia dependent on sympathy with uterine irritation, partaking of the nature of *Clavus hystericus*."

Sticta-pulmonaria has been used with much success by several of our medical friends in the cure of facial and frontal neuralgia. It is especially useful when the pains affect one side, and shoot from the jaws to the face and side of the head.

Apis has cured several cases of severe neuralgia of the head and face, accompanied or succeeded by impaired memory.

Cannabis-indica is a valuable remedy in cases of neuralgia occurring in weakened and exhausted subjects, especially when accompanied by optical illusions and alternations of exalted spirits and extreme mental depression. *Codeine* and *Opium* are indicated in similar attacks.

Coffea will prove highly serviceable in neuralgic affections accompanied by great nervous excitability, sleeplessness, and mental activity.

COMPLICATIONS OF NEURALGIA.—The irregular forms and complications of neuralgia are very numerous, and may be briefly noticed. They often arise from some irritation, near or remote, which may be easily overlooked. Thus constipation, with or without gastric derangement, causes or increases cerebral plethora. Dr. Parry supposes that neuralgias of every form arise from increased vascularity of the nervous neurilemma, the extremities of which are the seat of the disease; others refer the pain to a similar condition of the nerve at its origin. Hemiplegia, though transient and partial, is often connected with epileptic paroxysms. Loss of some of the external senses in these can only be explained by reference to the state of irritation or congestion at the origin of the nerves.

The face is more largely supplied with nerves than any other part of the body; it also exhibits more of the moral and physical phenomena of nervous irritation. 1. We see here acute pain in one point, caused by irritation at the root of a painless, though not insensible tooth: the real disease being felt at the sentient extremity of a nerve, con-

nected only through the brain with the sentient extremity of the nerve which supplies the tooth. 2. In *cephalea spasmatica*, or *sick headache*, there is a temporary cerebral plethora and pain, generally seated in the upper branches of the facial nerves of the same side. 3. Cephalæa hemicrania or periodical headache is often met with in persons who have never lived in malarious districts, and who for years are repeatedly attacked by it. 4. Neuralgia ophthalmia is one of the most painful forms in which neuralgia ever appears. We have seen some cases which originated in the irritation of a tooth, which resisted all treatment until a slightly sensitive tooth was extracted. The sensation of extracting the tooth, which in one case was quite loose, was felt in the inflamed eye. Recovery was immediate, without any further treatment. 5. Dyspeptics are liable to spasmodic twitchings of the eyelids of one side, which may pass nearly into a temporary paralysis affecting the motor nerve only, as the affection is without pain. 6. Palsy of one side of the face and tongue may appear in the same muscles that are supplied by the nerves which are the seat of the pain in tic-doloureux. The affected side loses its expression; the cheek grows smooth and sinks downward; the eyelid droops and does not cover the ball in sleep; the tongue, when projected, turns towards one side; and the opposite angle of the jaw is drawn back.

Pathology—The fifth pair of nerves, and occasionally the portio-dura of the seventh pair are the seat of all these anomalous forms of neuralgia. They are much exposed to moral as well as physical agencies. External impressions are transmitted to the cerebral centres of the nerves. These central extremities are declared by Dr. Gall to be surrounded by a mass of cineritious matter, which seems to be little less than a congeries of blood-vessels. It is, says Dr. Drake, "extremely probable that when a nerve is excited to perform its ordinary functions, there is an increased determination of blood to this cineritious substance." And when this increased determination is frequently repeated, the point on which it is pressed receives a larger proportion of the sanguineous fluxion than the cineritious roots of the nerves. The state thus induced is one of predisposition.

It is through this portion of the fifth nerve, which gives external sensations from the face to the brain, that that keen perception of heat and cold is communicated, by which a few drops of water in syncope revive the energies of the whole system; and, also, through the same channel the body and mind are invigorated by washing in the morning, or after fatigue. The minute fibres of the nerve impart acute insensibility to the teeth, associate the salivary glands with the tongue, endow it with the specific sensibility to form the organ of taste; they give to the retina its sensibility to light, cause it to contract when light is too strong; and, in the nerves establish that well-known

relation between the taste and smell, and preserve the Schneiderian membrane in a proper state for the exercise of the olfactory branches. (*Drake, Wes. Med. and Phys. Jour.*, Vol. I. p. 1.)

Nervous headache is a sympathetic affection, and the concomitant result of some deep-seated disturbance of the organism. The vegetative system is generally in fault—stomach, liver, bowels, and especially the uterus in females. It is often dependent on an overtired brain. Aconite usually palliates, and generally does not prevent the due action of specifics.

1. NEURALGIA FROM LOCAL IRRITATION.

Sir H. Halford has made some publications to illustrate the history of neuralgia, which he thinks is generally connected with the deposition of bone in places where it does not commonly exist, or a preternatural growth of bone in a diseased state. In a case of a lady, aged forty, after the resources of the faculty were exhausted, a tooth was extracted which had no external marks of disease. A large exostosis was found at its root. The neuralgia gradually subsided into a less severe form, returning less frequently and with less pain. An English nobleman suffered from this disease in its most marked and painful form. All treatment was unavailing for two months and a half; at that period a portion of the bone enclosing the maxillary antrum exfoliated the Duke speedily recovered, and had no return. The bone had been injured by a fall from a horse many months before. The Earl of C endured inexpressible agony from this disease for many years; and submitted to the excision of parts of various branches of the fifth pair of nerves by the hands of Sir Everard Home and Sir Charles Bell, with only temporary relief. At length, seized with apoplexy, he lay for some days insensible; and after recovering from this he suffered less; but he was never cured, and only died of old age. Repeatedly did the separation of portions of exfoliated bone show the source of his sufferings; and yet the only relief he obtained was from the apoplectic attack, which partially paralyzed the nerves of sensation. A distinguished physician endured all the agonies of martyrdom during many years, and at last died of apoplexy. No treatment had ever afforded him any relief, though several branches of the nerve were divided. On dissection the frontal bone was found of unusual thickness above the frontal sinuses. On the falciform process of the dura mater was found a small osseous substance of three-fourths of an inch in width, and a line in thickness. (*N. Y. Med. Phys. Jour.*, 1827.)

Extreme pain in various parts of the face may be excited by decayed teeth, which in themselves are not painful, and will usually cease entirely on the extraction of the teeth.

2. DENTAL NEURALGIA.

Cases caused by Local Irritation or Pressure on a Nerve.—1. In a case of fourteen years' standing, the anterior maxillary foramen, at which pain had been felt, was found to be almost entirely closed by an osseous deposit, consequent upon the formation of an alveolar abscess contiguous to it. Dr. Fundenburg, of Pittsburg, exposed the foramen by incision, and drilled out the bony deposit: the nerve was freed from pressure, and the patient entirely recovered.

2. A well-marked case of facial neuralgia: The teeth not suspected as the cause of it. But, on tapping a superior bicuspid, the patient screamed with pain. The tooth was extracted, and a large exostosis was found at the end of the fang, the patient was cured.

3. A case of two years' standing: There was "a singular pain in the side of the head, accompanied by a darting pain in the lower-jaw," extending down the neck and side. Pain excited by tapping an inferior cuspidatus—the tooth was extracted—"a large osseous deposit was found on the fang," and the patient was relieved. (*Louisville Med. Jour.*, 1840, p. 336.)

4. A colored girl, aged twenty, general health good, except pain in the face, near the articulation of the jaw, and forwards towards the angle of the mouth; side of the head and down the neck backward towards the trapezius muscle, and to the point of the shoulder. Pain paroxysmal; worse at night; no fever; clearly neuralgia, not rheumatism. She had been treated with purgatives, blistered by concentrated Spirits of Ammonia over the seat of the facial nerve; took acetated Tincture of Opium. Veratria Ointment was tried, 15 grains to 2 ounces of lard for several days. The blister had given some relief, nothing else had done any good whatever. She took one-twelfth of a grain of Veratria every four hours, continuing the ointment. Up to the fourteenth day no improvement. The mouth was now examined—some decayed teeth on the affected side; pain produced by tapping several of the teeth. Most severe on the first molar above. It was extracted, and at the extremity of its fang was a sac as large as a pea, filled with pus; the root carious. Some other fangs in the same state were removed also. Some soreness remained several days, but no return of the neuralgia. (*Dr. Bayles' Louisville Naval Hospital Report*, 1840.)

3. TRAUMATIC NEURALGIA FROM WOUNDED NERVES.

Mr. G. Bell, of Edinburgh, gives the case of a young lady who was bled in the cephalic vein of the right arm. In ten days the elbow stood at an acute angle, and the fingers were firmly contracted. Extension when attempted caused great pain. The incision in the

vein had firmly united, but gentle pressure gave great uneasiness. The pain extended downwards to the fingers; and upwards along the inside of the arm to the axilla and clavicle. When an exacerbation of pain recurred, she was seized with stertorous breathing, tremors, subsultus tendinum, with febrile symptoms. To arrest the progress of the disease every palliative measure was tried in vain, and tetanus was apprehended.

Operation.—An incision, three inches long, was made over the vein, which was displayed and tied in two places, one inch and a half apart. It was then divided between these two points, which caused instant relief, allowed the freest motions to the wrist and elbow. The patient recovered perfectly. Several other cases were treated in the same way with success. (*Edinburgh Journal.*)

4. NEURALGIC OPHTHALMIA.—This is a form of intermittent fever in which the pain concentrates in the nerves of the eyes, increasing with terrible intensity at a certain hour every day. The exacerbation of neuralgic pain in the optic nerves comes periodically in the place of a regular chill; it increases regularly through part of the day and evening, then subsides during the middle of the night, and is scarcely felt on the following morning. Day after day it continues to recur until it is arrested by treatment, or is changed into permanent blindness.

Treatment.—Of all remedies *Quinine* is the worst here. It requires large doses to cut short the periodical paroxysms; and such doses always increase the pain as well as render permanent the inflammation of the different structures of the eyes. In this manner permanent blindness is very often induced. The best treatment consists in *Aconite* and *Bell.* in alternation during the paroxysm; *Camphor* and *Opium* just before the next paroxysm; a warm bath at its commencement; and *Arsen.* during the interval.

5. SICK HEADACHE.

GENERAL REMARKS.—A distressing form of cephalgia, occurring most frequently in literary or professional men, and in delicate but intellectual females. It occurs most frequently in persons between the age of puberty and forty or fifty years. Some are peculiarly subject to it for a long series of years; and many though temporarily relieved by various modes of treatment, are never permanently cured.

Description.—It is common for sick-headache to commence in the morning on waking from a deep and unrefreshing sleep, after previous fatigue, mental excitement, or irregularity of diet. There is: disturbance of vision; dull and distressingly oppressive pain of the head, centering in one temple, most frequently the left; tenderness and fullness

of the eye of the same side, extending across the forehead, and sometimes fixing itself over the inner corner of the eyebrow; painful sensibility to light; clammy and unpleasant taste in the mouth; chilliness of the skin, cold and moist hands and feet; pulse feeble, face pale (*Wright.*)

- After the pain in the head and about the eye has become severe, sickness at the stomach begins, and is increased by every movement, especially raising up; flatulence; retching, shuddering and vomiting of the contents of the stomach, or of a thin, glairy fluid of an acrid sour taste. The vomiting sometimes gives partial relief; and in some cases antacids may restore it to a more natural state. But generally the nausea returns; vomiting again ensues of yellow, nauseous, bitter bile, with intense feeling of depression. Some of these attacks last six or twelve hours, others continue for one, two, or even three days. And many after recovery from one attack expect only a repetition of the same tortures in the course of a few days.

DIAGNOSIS.—Distinguished from hemicrania by the predominance of the gastric symptoms over the neuralgic. It has none of the strict periodicity which belongs to the intermittent neuralgic disease of the head and eye. (*Hartmann.*) From dyspeptic headache by being more severe, by the peculiar features of the latter which are: whitish coat on the tongue; fingers and toes cold and numb; slight nausea, languid pulse; indistinct vision, especially before the attack begins; liability to begin just after eating, though often later. It occurs to persons of delicate digestion who give too close attention to business, or are excessively fatigued, worried, or anxious. (*Wright.*)

Sanguinaria often cures this form of headache when accompanied by persistent nausea, redness of the tongue, burning sensation in the throat, chest and stomach, bitter eructations, yellowness of the face and eyes, loathing of food and drinks.

Veratrum-viride is useful in cases marked by extreme nausea and prostration, coldness of the extremities, feeble pulse, and loss of spirits and courage.

Ferrum-aceticum in the lower potencies, and continued for a long time, has sometimes cured obstinate cases of sick headache.

Nitric-acid and *Ferrum* on alternate weeks has now and then cured severe cases of this malady.

5. HEMICRANIA.—MEGRIM.

This disease is a true neuralgia, and is generally caused by a dynamic disturbance of the fifth pair of nerves. The symptoms vary according to the seat of the affection, which is sometimes in the peripheral and sometimes in the central end of a certain branch of the nerve.

It is important also to discriminate between the primary and secondary symptoms, as the sympathetic and trifacial nerves are in such close sympathetic relation that morbid affections in one frequently cause symptoms of disease in the other. Irritations of the viscera sometimes affect the fifth pair of nerves, and original affections of the same nerves may affect the abdominal viscera. (*Tietzer, of Königsberg.*)

The attacks are periodical. A boring pain is felt in a circumscribed spot near the sagittal suture; or it occupies one side of the head, the forehead, supra-orbital and temporal region, extending to the orbits, sometimes relieved by pressure, at others the part is extremely sensitive. When the paroxysm is at its height, nausea and vomiting are excited which give slight relief. The patient is extremely sensitive to light, noise, change of temperature, the smell of food, and every degree of mental agitation. The paroxysm generally commences with sunrise on waking, and ceases at night; sometimes it lasts longer, and terminates in a refreshing sleep. The left side of the head is more frequently attacked than the right. The commencement is frequently preceded by vertigo, cheerful and loquacious mood, or sadness, loss of appetite, sour eructations, vomiting; it generally increases gradually, commencing with a slight pressure or sensation of coldness in the threatened part, which changes to a throbbing, boring, burning, stitching, or tearing pain. (*Hartmann. Vol. 4, p. 37.*)

DIAGNOSIS.—Distinguished by the neuralgic character of the pain, its periodical recurrence, absence of cerebral functional derangement and febrile symptoms during the paroxysm. The disease may become more fully established after years of occasional recurrence, and then the pain becomes more constant; there is sleeplessness; painful swelling over the seat of the pain, exquisitely sensitive.

CAUSES.—Nervous, irritable, or hysterical constitution; hypochondriac, chlorotic females, enfeebled by hard labor or haemorrhages; sedentary life; literary pursuits; indigestion; obstructions of the portal system; mercurial dyscrasia; menstrual derangements; excessive intellectual labor; excitement of the imagination. Use of coffee and tea.

TREATMENT.—*Belladonna.*—Its specific action is on the cerebral system, which is the central point from which all its symptoms radiate as from a centre, in all diseases. Even the inflammations induced by this remedy always emanate from within outwards, by an increased nervous action in the central organ. Thus in the exanthemata, as soon as the eruption appears the severe cerebral symptoms, the headaches, and general febrile symptoms caused by the nervous system irritating the vascular, disappear. When an exanthematous eruption is suppressed, the brain is instantly the seat of a violent attack. Belladonna cures only those diseases of the splanchnic nervous system, or of the

abdomen or uterus in which there is affection of the brain. In all the visceral inflammations cured by Belladonna we may safely conclude that these diseases were expulsions of inimical agents which originally threatened to attack the cerebral nervous system. The same remarks apply to all fevers, especially typhus, or the *febris nervosa versatilis*.

Belladonna is then the specific remedy for the cerebral nervous system, especially for the fifth pair, and the vascular system under the influence of this sphere. An inflammation or fever to which it is applicable is accompanied by symptoms peculiar to the fifth pair: "more or less reddened conjunctiva, the white of the eye is injected, an unsteady fixed look, distorted features, turgescence of the face, confusion of the head, amounting at times to a loss of consciousness, congestions of the head, aching pain in the forehead and eyes."

Belladonna seems especially suited to neuralgia of the fifth pair of nerves, particularly of the ophthalmic branch of this nerve and its three sub-branches, the frontal, lachrymal, and nasal. The symptoms are: pain arising from the middle of the forehead, extending to the eye, and running along the ridge of the nose towards its point and the *alæ*; increased lachrymal secretion.

Particular Symptoms of Belladonna in Hemicrania :—One-sided pain over the eyebrows, extending towards the orbit and nasal bones, increased secretion of tears. Aching pain in the forehead, and on the eyes; feeling of pressing asunder; increased greatly by every motion of the head or eyes, by a ray of light, or the walking of others in the room; eye injected, face flushed, increased flow of tears. Belladonna is the proper remedy in all cases where the primary affection is of the supra-orbital region, that is of the ophthalmic branch and its nasal filament. Arthritic hemicrania shooting deeply through the whole hemisphere of the brain, depriving the patient of consciousness. Relieved by two doses of Bell., in thirty-six hours. (*Hartmann.*)

Nux-vomica.—From the intimate relation between the trifacial and sympathetic nerves, the gastric pain or derangement in hemicrania may have its origin in either set of these nerves, and be transmitted sympathetically to the other. It is only when it originates in the ganglionic abdominal system that these abdominal symptoms, the nausea, eructations, retching, and vomiting point to Nux as the proper remedy. When Belladonna has acted favorably, but a relapse has taken place from a continuance of the abdominal symptoms connected with hemicrania, Nux or Sepia will succeed.

Nux is specially applicable to men, in affections *originating* in the ganglionic system, developing hemicrania sympathetically; when there are haemorrhoids, or pains in the sacrum, pressure on the rectum, constipation, gastric derangements; persons of choleric temperament, intemperate, leading a sedentary life of hard study, having made free use

of coffee. The pain is drawing, aching, as if a nail had been driven into one side of the head; the brain feels beaten or bruised; pain early in the morning, immediately after dinner, or is excited by mental labor. *Nux-vomica* is the "mistress of the ganglionic system." It causes obstructions in the abdomen, and symptoms of local plethora. In females the menses are often too early and sometimes profuse. (*Tietzer*) The attack is marked by paleness of the face, and features distorted.

Aconite.—Tearing, drawing, jerking, stitching pain in the head, fullness and weight of forehead, throbbing in the temples, bloated and red countenance, the patient almost frantic with the headache; he moans aloud, complaining of great anguish, shortness of breath, palpitation of the heart. Hartmann gives the patient *Aconite* to smell every five or ten minutes. In a short time he goes to sleep relieved.

Sepia.—*Physiological Sphere*.—*Sepia* acts on the nervous and vascular system wherever there is a passive congestion connected with dyscrasial suffering. All diseases says Dr. Tietzer, to be cured by *Sepia* must be traced to such a source. It is peculiarly indicated in females in whom there is *hysteria*, or nervous derangements of long duration; in true *hemicrania hysterica* which is always connected with some disease of the reproductive system; in cases where the one sided pain is more stinging, with leucorrhœa in the intervals of the menses, frequent sweats, *sudor hystericus*; with a peculiar offensive perspiration in the axilla, and sole of the foot. The hemicrania which is curable by *Sepia* is gradually developed from an affection of the reproductive system; the face expresses deep suffering, features distorted, countenance pale, dirty yellow; with incipient chlorosis. Some cases in which *Belladonna* had been indicated have been neglected till the *Sepia* symptoms were developed, and it becomes necessary. It is necessary in those cases of hemicrania in young females in which the cerebral nerves have excited the sympathetic, producing a long train of hysterical symptoms, always aggravated by allopathic practice. The pain in these cases is stinging, or aching, boring, tearing, throbbing, sometimes piercing and twitching. Both *Belladonna* and *Sepia* require a congestive condition towards the brain, but in *Belladonna* the congestion is more active, in *Sepia* more passive; in *Belladonna* there need be no dyscrasia present, in *Sepia* it should never be absent. (*Tietzer*) *Sepia* is indicated by stitching pains in one of the frontal or occipital protuberances, like flashes from without inwards, reverberating deep in the brain for a long time, recurring often; then there is heat in the head, feeling of tightness, and pain on contact. In arthritic cases the scalp is painful to the touch, with sensation of tightness.

Ignatia.—Its specific sphere is the *spine* from which all its symptoms proceed. It produces nervous diseases, and especially clonic

spasms. Its symptoms in hemicrania: cases of spinal irritation in which sympathetic pain is excited in the trifacial nerve. In these cases clonic spasms are frequent. The patient is sensitive, peevish, excitable, hysterical, with sanguine nervous temperament, is delicate, falls easily in love, is romantic, bears trials meekly, and readily falls into clonic spasms after mental agitation.

Characteristic effects of Ignatia: over-excitement of the spinal nervous system, giving rise easily to nervous symptoms. In hemicrania of this kind the pain is chiefly pressing, sometimes stinging, the course of the pain being inward, not outward; and mainly in the forehead and root of the nose; outwardly pressing pain, as if a nail were pushed out through the temple and side of the head. The above symptoms, or part of them, occurring in a delicate lady, caused by vexation or grief are generally cured by Ignatia. (*Tietzer*.)

Arsenicum.—Its physiological effects in general radiate from without inward. As under the influence of Belladonna we see a turgor of blood, a rush of blood to the periphery, under *Arsenicum* we see the opposite effect: rigidity of the features, collapsed face, inability of the nervous system to incite the vascular and direct it towards the surface.

The field of action of Arsenic is the ganglionic system from which the organs of vegetative life in the abdomen receive their nerves. The over-action of Arsenic paralyses this system; there is an inward state of congestion giving rise to the highest degree of inflammation and even mortification. In a lower degree of its action Arsenic causes *abdominal plethora*. In the congestive state inwards from Arsenic the vascular system is deprived of the necessary impulse from the nervous system, sufficient to produce a common inflammation, as the ganglionic system,—when mortification has not already taken place,—soon becomes paralysed by the over-irritation. During these processes we frequently find a decomposition of the blood, a tendency to the destruction of the organic substances, the breaking up of the cohesion of organic particles. The form of hemicrania that is curable by Arsenic only is caused by abdominal plethora dependent on irritation of the ganglionic system and affecting the trifacial nerve by sympathy. In this form there is disturbance of the portal circulation, and dynamic not organic disease of the liver; there are frequent attacks of bilious colic, sometimes alternated with hemicrania. These symptoms are curable by Arsenic. Tietzer says he cured one such case with it which had been eighteen years under treatment; the pain is aching, tearing, stunning; patient very sensible to the open air; keeps in motion, and is relieved by outward warmth, feels excessively languid, chilly, and sometimes bloated. Hartmann says: the pain recurs regularly after dinner, relieved by cold water to the head, but returning on its removal, worst at evening or night; relieved by warmth or compression.

Calcar.-carbonica.—In constitutions in which we see defect in the reproductive system; obstructions, deposits, intumescences in the lymphatic and glandular systems; dyscrasial affections of the membranous structures, of all the white structures which have but little vitality or blood, and are nourished chiefly by lymph. Obstructions in cartilages, tendons, serous membranes, where development is arrested; obstructions in the lymphatics. In early infancy these structures predominate; and in them Calc.-carb., is specific where there is any arrest of the development of the organs; imperfect formation of the blood as in scrofulosis. The only cases of hemicrania curable by it are those caused by disease in the reproductive system, or in whom scrofula was visible in early life; characteristics: large head, bloated abdomen, narrow chest, flabby, poorly developed muscles; bones containing but little phosphate of lime; pain dull, aching in upper part of the head and forehead, increased by the open air, drawing pain in the head, which feels cold; nausea; tearing in the right temple, great sensitiveness to the touch; throbbing in the brain; evacuations or vomiting; menses profuse and too early; pain most frequently radiating from the right side. (*Dr. Tietzer Hom. Jour.*, 1849.)

Thuya.—Cases of long standing following badly treated sycosis; the hemicrania frequently preceded by rheumatism. Thuya, through the ganglionic system of nerves, produces a peculiar dyscratic, or *sycotic* vitiation of the humors manifested by a morbid degeneration of the cellular tissue under the skin and between the muscles, and the formation of a dry or purulent excrescence. Affecting sometimes the spinal at other times the ganglionic system of nerves, it also causes hemicrania through the trifacial nerves. Characteristics: pain mostly on the top or one side of the head, tearing in the forehead and face and malar bone; sensation as of a nail driven in by little at a time. If, in such a case, we may expect the existence of hidden sycosis, the disease being chronic, aggravated by rest and warmth, particularly in bed, preceded by rheumatic or arthritic pains, we may consider Thuya the only homeopathic remedy.

Spigelia.—Hemicrania on the left side of the head, face, and teeth; character violent, tearing or aching pressure, aggravated by stooping, by the open air, or slight movement; the pain of gouty origin; arthritic affections being present in various joints.

Pulsatilla.—Pain piercing, throbbing, tearing, twitching, mostly in the temples and back of the head; nausea, heaviness in the head, dizziness; buzzing, piercing, twitching, tearing in the ears; loss of appetite and thirst, with chills; pain increased in the evening, in hot air, by sitting, ameliorated by bandaging the head; in persons of slow, quiet, amiable dispositions, phlegmatic, melancholy, lymphatic temperament; disposed to weeping; pale countenance; females in whom

menstruation is delayed. Chlorotic, hysterical constitutions, good natured, sad whining mood; pains worse in the evening.

Coffea.—The attack is excited by mental agitation or taking cold; the pain drawing, aching, like a nail thrust into one side of the head, or as if the whole brain were crushed or shattered; pain excessively violent causing cries and shrieks, increased by eating; patient sensitive to noise, is chilly, shuns the fresh air; he has an aversion to coffee during the attack when it originates from the use of this article. *Nux* or *Bryonia* after it.

China.—Tearing aching pain in the temples, preventing sleep; greater in consequence of touch or exercise in a draught of wind; during excitement of the mind, in persons quarrelsome, obstinate, disposed to anger; tearing with pressure at some spot of the head, mental excitement, restlessness, excessive activity of the fancy.

Capsicum.—Pain throbbing, piercing; nausea and vomiting, pain increased by motion, stooping forward or moving the eyes; sensitivity to cold air, laxity of fibre and phlegmatic temperament. Hysterical hemicrania.

Colocynth.—One-sided pain, drawing or pressing; sickness and vomiting, shortness of breath, pain more in front or left side, coming on towards evening, extorting cries and tears increased by stooping, lying on the back, motion, shaking the head, or moving the eyes or lids; pain produced by excitement of mind, indignation, exasperation, inward grief or unworthy treatment; great uneasiness and anxiety. (*Tietzer*.)

Chamomilla.—Drawing beating pains in the right half of the head, recurring in paroxysms and excited by emotions; quarrelsome and vexed mood, hypochondriac, whimsical.

Bryonia.—Pressing pain in the left frontal eminence from within outward, as if the part would burst open, tearing pressure in the affected hemisphere of the brain, increased by motion; dizziness and heaviness, sleeplessness and a vexed irritable mood.

Cyclamen.—Dr. Eidherr, of Vienna. A lady aged 37 years, menses deficient and irregular, delayed two or three months. Periodical semi-lateral head and face-ache for four years, appearing about every week, or fortnight, and lasting from twelve to thirty-six hours, worse at the menstrual epoch. The skin, eyelids, lips and gums very pale, body lean, skin dry and cool; other organs apparently healthy. Right eye spasmodically closed, discharging hot tears when forcibly opened. Ignatia tried for six days and failed. *Atropia* 4° tried for two days, on the third she was free from headache. After four days more, there was headache again with vertigo and diplopia. *Cyclamen* 3° cured her in four days, menstruation then became regular and there was no more headache. (*Allg. Homœop. Zeitung*.)

A lady aged 27, robust, with red face, had violent pulsative pain for

mach. (See p. 270, Vol. I.) If, however, the headache is of a neuralgic character, producing the nausea and vomiting at a later and highly aggravated stage, give the remedies for headache above enumerated, according to the symptoms of each.

6. *Headache from Constipation.*—*Nux-vomica.*—Walking or moving the head makes the brain feel sore; pressing in the temples; no relief from sitting up or lying down; eyes dull, inclination to shut them; sleeplessness; head heavy; feels worse on moving the eyes or making mental effort; worse in the morning, in the open air, or after meals; particular loathing of coffee.

Pulsatilla.—Shivering, with thirst, pain only on one side, with little determination of blood; the patient is of a mild and quiet temperament, inclines to weep; is easily agitated.

Bryonia.—The head feels as if pressed together from both sides and on stooping, as if every thing would fall out of the forehead; the nose bleeds without giving relief; the eyes water and burn.

Opium.—The pains violent, tearing, bursting sensation in the forehead; visible throbings in the temples; congestion of the brain; eyes restless; thirst; mouth dry; sour eructations, inclination to sour and offensive vomiting.

PALLIATIVE MEASURES.—The motions of chewing, especially when no food is swallowed, act by the derivation of blood from the cavernous sinus, and the sub-petro-sphenoidal plexus of nerves; these communicate with the pterygoidian masseteric and alveolar plexuses externally. The latter are emptied by the contractions of the pterygoid muscles in moving the lower jaw, and the void is immediately filled from the internal sinus, through the veins which traverse the sphenoidal fissure, the inferior maxillary, and spheno-spinous holes, the carotid canal, &c.*

Mr. Dally gives the following movement or mechanical treatment, the state of the digestive organs being considered:

1. Pressure with the fingers from before backwards, along the back of the longitudinal sinus and transverse sinus of the dura mater.
2. Passive torsion of the trunk, the knees being fixed.
3. Rotation of the feet.
4. The hand of the assistant, on the seat of the pain, resists the effort of the patient to incline the head on that side.
5. Passive torsion of the head.
6. Slight circular percussions of the head with the palms or fingers.
7. Concentric vibration of the hands of the aid, placed one upon the brow, the other upon the occiput.

By increasing the flow of venous blood as well as the air into the lungs yawning relieves the pain of certain headaches. The pains are

* *Aretæus de Curat. morb. L. 1. c. 1.* Cœlius Aurelianus *Morb. Chœn.* L. 1.

less acute during inspiration than during expiration; hence an indication to draw long and full breaths at the beginning of a headache. In attacks of moderate severity, a walk in the cool pure air, having the neck lightly dressed and the superficial veins free from compression, may distribute the blood from the brain, and, with further exercise, may re-establish the equilibrium of the circulation when no mechanical lesion exists.

7. NEURALGIA CŒLIACA.—NEURALGIA OF THE CŒLIAC OR ABDOMINAL NERVES.

GENERAL REMARKS.—It was first fully described by Autenrieth. After precursory premonitions, slight pains, gradually becoming better defined; the patient feels for some minutes, or even hours, an apprehension of an impending paroxysm. Suddenly he is seized with a violent pain in the pit of the stomach; this is burning, gnawing, tearing, stitching, aching as if a hot coal were lodged there, or as if the flesh were being forcibly torn. After lasting for a few minutes or a half hour, with such severity as to excite perfect phrenzy or fainting, the pain shifts its seat, shooting upward under the sternum towards the neck like a flame; or, dividing into two currents, which follow the course of the sympathetic nerve, ascend to the neck on both sides of the spine; otherwise the pain suddenly branches off in different directions, "particularly towards the hypochondria, following the course of the plexus lienalis and hepaticus. As the paroxysm subsides in severity, partial relief is accompanied by eructations and accumulations of water in the mouth. These symptoms are followed by a feeling of emptiness in the abdomen; languor and lassitude of the whole body; the tongue remaining clean, the appetite and digestion good. The paroxysms recur at various intervals, sometimes every day, seldom oftener, more frequently at night, and in changeable weather, as in spring or autumn. (Hartmann, iv. p. 48.)

CAUSES.—Hereditary abdominal weakness, sedentary life, suppression, or imperfect appearance of haemorrhoids, itch, or mismanaged gonorrhœa. We have seen several cases in which similar paroxysms to that above described formed the prominent feature of intermittent fever.

TREATMENT.—*Belladonna* and *Aconite* alternately, every half hour, sometimes afford prompt relief. Should these medicines disappoint us, we may resort to any of the following: *Nux-vomica*, *Nux-moschata*, *Arsenicum*, *Stibium*, *Colocynth*, *Pulsatilla*, *Mercurius-corrosivus*, *Colchicum*, *Coccus*, *Helleborus-nig.*

Nux-vomica.—Sanguine, bilious temperament; subject to haemorrhoids; pain of true neuralgic character, excessively severe; seden-

tary life; mind much occupied by literary pursuits; pain begins in the morning, and a heavy sleep follows the paroxysm, which ends in general exhaustion; pain relieved by lying down. It is tearing, stitching, hard aching; gastric symptoms, as eructations, pyrosis, &c., following the paroxysm.

Arsenicum.—Nervous melancholy temperament; the pain causing swooning; the paroxysms begin about midnight, and rouse the patient from sound sleep; relieved by walking about; pain of burning character; anguish extreme; nervous symptoms following the paroxysm.

Sabadilla.—Burning pain at the pit of the stomach, flashing upwards in the chest towards the throat; intolerable oppression of the breathing, threatening suffocation immediately upon waking; constrictive sensation deep in the fancies; eructations and emptiness of the abdomen, general languor after the paroxysm.

Cicuta-virosa.—In nervous irritable females; burning-stitching, throbbing pain in the pit of the stomach, with spasmodic and ungovernable hiccough.

Aconite in all neuralgias, with general nervous irritation and hysteria.

8. CARDIALGIA.

1. *Idiopathic Cardialgia*.—This is a primary affection of the stomach without general fever or much constitutional disturbance. A predisposition to it may be hereditary; it is most common among females possessing irritable nerves, who are feeble, hysterical or chlorotic, much disposed to spasms at the menstrual periods, or about the time of life when they are about to disappear.

Cardialgia, as we have seen, is usually a symptom of dyspepsia, although writers have classed it as a distinct malady, having no necessary connection with this disorder. The intimate relation between the nerves and membranes of the stomach and liver, and those which their functions sustain towards each other, incline us to the opinion that derangement of either of these parts of the organism must involve, to a greater or less extent, each of the others. The seat of cardialgia is in the nerves of the stomach; and as the healthy tone of the mucous membrane, &c., is dependent upon the normal integrity of the nerves which supply this organ, their mutual dependence will be readily perceived.

DIAGNOSIS.—Pinching, gnawing, and cramp-like pains in the stomach often extending into the back and loins, relieved on pressure of the epigastrium, or when the abdominal muscles are relaxed, faintness, anxiety; appetite natural, or but slightly impaired, pulse natural, food may be taken into the stomach with impunity; pains of a more

severe character than those which occur in chronic gastritis, although there is no feeling of heat or thirst.

CAUSES.—Abuse of cathartics; highly seasoned and indigestible food; food kept too long after being cooked; soured food, sour wine, beer, fruit, fat meats, pastry, &c.; abuse of stimulants, as coffee, tobacco, irregularity in eating; suppression of cutaneous eruptions, foot sweats, or habitual discharges of blood; sudden emotions; mental anxiety; exposure to cold when the body is heated; in the most unmanageable cases there is organic disease of the stomach.

PATHOLOGY.—This disorder has been supposed to be dependent on an abnormal condition and disturbed function of the sympathetic and par vagum; upon perforating ulcer of the stomach; commencing schirrhous; an altered condition of the coats of the organ; and upon disease of the pancreas, with which we are at present but imperfectly acquainted. None of these opinions have been established as generally true. Dr. Meyer says he has "most strictly examined each case of cardialgia." In only a few of the cases was he satisfied of the pathology. "Certainly, when there has been an induration in the epigastrium, with the characteristic vomiting, the constitutional affection and the external appearance, I have ascribed the disease to the carcinomatous diathesis; and to an ulcer of the stomach, when there has been frequently recurring vomiting of blood." In twenty-five cases treated at the Polyklinik, at Leipzig, "there was only one in which existed considerable enlargement of the liver." In the rest he "could not discover any organic change, and was, therefore, justified in considering the gastralgia as a primary disorder."

TREATMENT.—*Nux-vomica*.—This is the counterpart of the above train of symptoms. The patient has been long dyspeptic, is sometimes hungry without appetite, and is at the same time disgusted at the sight of food; has a distaste for his favorite coffee, increase of thirst; the tongue covered with a whitish mucus, bad taste, putrid or sour; after eating, a swollen state of the stomach, with occasional pain on pressure; when he has putrid taste and sour eructations after eating; nausea early in the morning when fasting; frequent retching; stools hard, and not as usual daily; sleep disturbed by nightmare; when he complains, occasionally, of a pressing aching pain in the forehead, on awaking in the night, when he is of a depressed or excitable humor, without any remarkable decrease of strength; Nux hardly ever fails in these cases, though it often makes a slow "symptomatic process, especially noticeable in drunkards.* Often, in cases of constipation, says Meyer, "I have seen the greatest benefit from Nux-vom. 30°, when the first and second had failed.

* Dr. V. Meyer, *Wissenschaftlicher Bericht der hom. Poliklinik zu Leipzig*, 1857

Nux-vomica is appropriate for cardialgia caused by abuse of coffee or by suppressed eruptions, even if of several years' standing; the cardialgia of drunkards, which is only partially relieved by vomiting; heartburn, and hysterical cardialgia, or that caused by the use of coffee or chamomile tea.

Symptoms by which it is indicated.—Contraction, pressure, cramp, griping or spasm of the stomach, feeling of oppression from the pressure of clothing; pain from flatulence retained by spasmodic contraction of the stomach or duodenum, increased by taking coffee or food; oppression and constriction of the chest, spreading to the spine, between the shoulders or small of the back, and feeling like a band drawn round the chest. Pains early in the morning, rousing the patient from sleep; nausea during the attack; accumulation of water in the mouth; eructation of sour or bitter fluid; vomiting of partially digested food, or ineffectual retchings, with burning cardialgia; palpitation of the heart; anxiety; sour, putrid taste in the mouth; constipation; flatulent distension of the abdomen; hemicrania; sick headache; cardialgia, beginning in females at the time of too profuse menstruation. (*Hartmann, &c.*)

Chamomilla.—Cardialgia in persons of irritable nerves, easily excited by anger; pain in the pit of the stomach, or under the short ribs, as if a stone were there; pain attended by shortness of breath and anxiety; worse at night, causing loss of sleep and great distress; pain in the top of the head; partial relief from rising from bed, from sleep, by bending double, or from drinking coffee when the pain has not been caused by it. When the cardialgia has been caused by drinking chamomile tea, Ignatia, Pulsatilla, and Coffea.

Pulsatilla.—Absence of thirst; complete loss of appetite, combined with aversion to flesh-meat, and longing for sour things; the bitter taste not constantly present, but depends much upon the kind of food and the occasionally occurring eructation, with, at times, risings up in the mouth. When, further, the white or yellow coating of the tongue is adhesive and difficult to remove, the region of the stomach is not distended, the patient only complaining of an uncomfortable feeling, when there is neither nausea nor retching, but shivering after each meal, especially towards evening, the patient feeling worse at that time.

Aconite.—In most cases, says Hempel, cardialgia is a simple state of venous congestion, which yields to Aconite and the application of warm flannel to the stomach.

Bryonia.—The taste is more insipid, the tongue presents only a slight coating. The prominent symptom is dryness of the mouth, either constant or occurring shortly after eating, without much thirst, unless for cold drinks. Appetite deficient, not entirely wanting; eructations

often cause the remains of the food to rise into the mouth ; pain, pressure, and shooting in the stomach present only in a slight degree, but increased by motion ; bowels generally constipated ; general health tolerable, disposition not much changed ; when there is headache it is generally one-sided.

Phosphorus.—“Gastritis complicated with heartburn, which, after it had ceased, annoyed the patient with an invincible scratching in the throat. It is especially useful when there is “loss of appetite, accompanied with a feeling of emptiness and want, together with an impossibility of eructating, apparently seated at the orifice of the stomach, with tendency to diarrhoea.”

China.—Healthy appetite always absent ; the patient can, nevertheless, eat on making an effort, though quickly satisfied. When there is appetite, it is capricious. Notwithstanding the absence of any desire for food the tongue is clean, the taste normal, or sometimes bitterish. There is an uncomfortable feeling after eating, without any assignable cause. This uneasy feeling is somewhat relieved by eructations, with the taste of food taken. Pain in the stomach not present, though in rare cases there was a feeling of coldness, a symptom common to *China* and *Berberis*. Debility is peculiar to *China*.

Belladonna.—Cardialgia in females of irritable nerves ; gnawing pressure, spasmodytic tensive pain in the pit and region of the stomach, inducing loss of consciousness or fainting, (hysterical,) usually connected with wind in the stomach, torpid state of the bowels ; sleeplessness and increased thirst, which aggravate the pain.

ANTI-PSORIC TREATMENT.—*Carbo-vegetabilis*.—Burning sensation in the stomach ; painful pressure in the stomach, with anxiety, aggravated by contact ; contractive spasmodytic sensation in the stomach, obliging the patient to bend double, arresting the breathing, heartburn, nausea, loathing of food, constipation ; feeling worse when lying down.

Carbo-animalis.—Fullness, malaise, and coldness of the stomach after a slight meal, relieved by laying the hand upon the stomach. A state of debility of the stomach, in which everything eaten gives distress.

Nitrum.—Burning pain in the stomach, with violent stitches, continuing after the paroxysm is over ; or feeling as if ice were in the stomach ; externally painful to the touch.

Calcar.-carbonica.—Weak digestion ; cutting, compressing, spasmodytic, pinching or choking pains, with great anxiety.

Graphites.—Weak digestion ; wrenching and griping in the stomach, relieved by eating ; accompanied with nausea and accumulation of water in the mouth.

Nitric-acid.—Cardialgia with diarrhoea, or following syphilis,

treated with Mercury; spasmodic wrenching in the stomach and pit of the stomach, ascending to the chest and oppressing the breathing.

Castoreum.—Bitter, sour regurgitations after a meal; sickness at the stomach, ptyalism, tightness and weight in the stomach; contractive pain under the sternum; ulcerative pain in the pit of the stomach, flatulent distention of the abdomen, constipation, urgings to stool ineffectual.

Lobelia-inflata.—Pressing constrictive sensation in the pit of the stomach after a meal, especially at night, extending to the back and inter-scapular region; bilious vomiting, oppression, and anguish in the chest, and in the small of the back. Nervous agitation.

Natrum-muriaticum.—Contractive cramp in the stomach, commencing after dinner, and continuing till evening; feeling of coldness in the back of the stomach.

Alumina.—Cardialgia with constipation.

Carb.-baryta.—Scrofulous subjects; fullness after slight meal; hardness of the stomach perceptible externally; pressure and weight; disorganization of the stomach.

Sepia.—Delicate nervous females, with fine skin, and liable to get angry; oppression and weight, with cramp in the stomach; sour eructations, indifference to life, occasional nausea, constipation, amenorrhœa. Nerves deranged by onanism.

9. GASTRALGIA.

Increased irritability of the nerves of the stomach, inducing spasmodic contraction of the muscular fibres.

Diagnosis.—General symptoms: neuralgic pain in the epigastrium extending to the hypochondria. The pain occurs in paroxysms, varying in intensity, and subsides partially or completely in the intervals. It is peculiar in its character, violently constrictive, twisting, turning, cutting, tearing, gnawing, or beating; and it is often most severe in the locality of the right or pyloric orifice of the stomach, at other times the pain is greatest at the cardiac orifice. Sometimes it extends from the pit of the stomach to the back, breast or scapulae, though in others it is confined to the epigastrium. As the disease is usually not inflammatory, the pain is frequently relieved by external pressure, as by pressing the stomach against hard bodies; though in many cases slight pressure cannot be borne. The attacks last from a quarter of an hour to a full hour, and subside soonest when the paroxysms are most severe. As the disease advances the paroxysms increase in intensity, and occur more frequently, and often last a whole day; or returning from trifling causes, such as light food that easily sours in the stomach, fatigue or change of weather. We have observed the exacerbations worse when the stomach was empty, as

before eating; they are considered worse in the afternoon; and they generally subside more completely during sleep.

Sympathetic Symptoms.—Pain in the region of the last dorsal vertebra of the spine, extending to the scapula; spasmodic action of the gastric muscular fibres, causing vomiting, or ineffectual muscular efforts; eructations, gnawing, spasmodic contraction of the abdominal muscles, or diaphragm. The pit of the stomach is drawn inward toward the spine; hiccough, obstinate constipation, strangury, feeling of excessive anguish, palpitation of the heart, constriction of the fauces; loss of voice; the stomach is distended by flatulence, which rises toward the throat, and is there arrested by spasmodic contraction of the œsophagus, forming the “globus hystericus.” In some cases the stomach is relieved by the raising of green bile, or an acrid-sour or slimy mucous secretion from the mucous membrane. The pulse is small and contracted, and the skin cold. The vomiting, though it gives great distress at the time, is generally followed by relief; the sweat breaks out as the pains abate, and the pulse rises.

In the most severe paroxysms the pain may terminate for the time in spasmodic fainting, tremor, delirium, extreme debility, convulsions, or tetanus. (*Hartmann*, Vol. IV., p. 69.)

A prominent feature, in which gastralgia surpasses almost every other form of physical suffering, is the terrible gloom and feeling of despair that accompanies it in all its severe paroxysms. The sufferer from real gastralgia not only endures a degree of actual pain *equal*, at least, to that of *tic-douleur*, but is weighed down by a feeling of despondency so terrible, that life, with all its accompaniments, is only regarded as a burden and a curse, instead of a blessing. The mental agony pervades the whole being, and poisons with bitterness all the fountains of health and peace and happiness on earth.

Treatment.—In the treatment of this disease in all its forms, homœopathy has gained many of its grandest triumphs; “it offers,” says Meyer, “amidst the frequent uncertainties of diagnosis, the great advantage of contending with the disease with tolerably certain weapons. This becomes more apparent, if we glance at the miserable therapeutic apparatus of the old school, and see how uniformly it tries one after another, in every case of spasm in the stomach, the same two or three remedies that have once or twice been of use; and when at last even the Opium panacea will do no good it stands helplessly by, and in order to conceal its ignominious defeat, declares the case to be incurable.”

“No where is the necessity and utility of accurate individualization more clearly shown, no where is allopathy taught the uselessness of its pottering minuteness in reference to the diagnosis of diseases, while neglecting the much more important diagnosis of medicines, than in our treatment of cardialgia.”

Remedies—Nux-vomica.—The many-sided action of *Nux-vomica* on the ganglionic system, and especially on that portion of it which influences the functions of the stomach, explains the frequency of its success in spasms of the stomach. So frequently has it succeeded, that it is too often relied upon alone on the ground that it is *the specific* for every form of *cardialgia*. On this point Böenninghausen says: "that *Nux-vomica* is often improperly used, and powers are attributed to it, which, from its sphere of action, it cannot possess." It is, however, true that the *gastralgie* which presents the parallel of *Nux-vomica* is that most often met with. It exhibits:

Aching pain in the stomach, commencing with tension and increasing to a squeezing, pinching pain, which occurs after any heavy meal, or even after taking the slightest quantity of food. The pain then frequently spreads over the whole extent of the stomach, and occasionally implicates the cardia, where there is felt a sensation of constriction, and as if the food had to be forced through the orifice; often, however, the pains extend far above the epigastrium, and give rise to oppression of the breathing. An objective symptom thereupon presents itself, viz.: the stomach is distended, and the scrobiculus cordis is arched forwards. As a consequence of this abnormal irritation and inordinate pressure upon the muscles and nerves, there occurs tenderness of the external coverings of the stomach, which is increased by slight pressure, but diminished by strong pressure. "This physiological sign is quite characteristic of *Nux-vomica*, and is yet more distinctly expressed by the fact, that the pains are momentarily relieved by bending the body forward, *i. e.*, by strongly compressing the stomach. The effort of nature to get rid of this abnormal state, is especially shown in the process of elimination. It has often occurred to me that the essential nature of most so-called nervous cardialgias consists in a spasmotic closure of the pylorus, which impedes or obstructs the passage of food into the intestines. The stomach, filled with wind, is first freed of its excess of ballast by eructation, which is either tasteless or accompanied by the taste of the food, or when there is at the time catarrh of the stomach, it may be sourish or putrid. Occasionally the attempts to eructate are at first ineffectual or painful, in consequence of the spasmotically constricted cardia through which the wind has to pass; but at the same time the eructations give transient relief to the cardialgic pains. It often happens that by the eructations, after they have lasted some time, and have pretty well evacuated the stomach of its gaseous contents, a fluid tasting of the food, is propelled into the oesophagus or mouth, by a kind of regurgitation. Nausea soon sets in, with or without flow of water into the mouth. After more or less severe retching, whereby at first only (sour) mucus is brought up, the contents of the stomach are emptied by vomiting.

which recurs again and again, until the last morsel of food is rejected from the stomach, whereupon the pains go quite away. Except during the actual paroxysm the patient has no pain, except perhaps that there may remain some tenderness of the external coverings of the stomach or scrobiculus." The spasm of the stomach for which Nux is suitable is not of a regularly intermitting character, for it is only caused by partaking of solid food. Liquids do not, as a rule, cause it, but it is worthy of observation that coffee may occasion or increase not only the exciting cause, but when taken in excess or in too weak infusion, the disposition to the disease. The cardialgia curable by Nux seldom occurs in the morning before eating, and hence this condition, which is generally characteristic of the medicine in question, is only deserving of attention in this disease where the other symptoms point to Nux. After a late supper the attacks may occur in the night also, for, as a rule, the pains do not come on until some time after eating. It is not necessary that the cardialgia for which Nux is suitable should be conjoined with gastric states, on the contrary we generally find the tongue clean and the appetite good. The bowels may also be in a normal state, although habitual or accessory constipation, which often accompanies spasm of the stomach, gives an indication the more for Nux-vomica. The gastric complication is most frequently observed in the spasm of the stomach of drunkards, where Nux, unless there exists some important contra-indication, is generally the appropriate remedy. The reflex phenomena sometimes arising from cardialgia, as headache, vertigo, &c., are only important for the choice of Nux, when, in addition to accompanying the other symptoms, they show peculiarities corresponding to those of the drug.

In such cases as embraced the above characteristics, Dr. Meyer says he had persevered with Nux even when improvement did not immediately appear. The improvement was perhaps delayed in many of the earlier cases by the using of low dilutions and their too frequent repetition; whereas the proper potencies given at longer intervals effected more rapid and more permanent cures.

Arsenicum.—The cardialgia suitable for Arsenicum must have reached a great height. The pains are excessively severe, sometimes so much so as to cause despair, in rare cases fainting. The salient quality of the pains is burning, often as if from red hot coals; but the burning often passes into gnawing and cutting, or it is combined with aching, which latter sometimes, though more rarely, occurs alone. Along with these torments there is external coldness and violent thirst, but only small quantities of liquid can be drank without increasing the pains. The stomach seems to be distended and enlarged; from it the pain may extend upwards, when it causes great anxiety, or downwards into the abdomen, or backwards, when some of the vertebrae may some-

times be tender. There is sensitiveness of the gastric region to slight and also to strong pressure. "Vomiting is a constant Arsenic symptom in gastralgia; it occurs either early or with great effort, and consists either of the food taken, or of thick, yellowish green, gelatinous looking mucus. The vomiting does not completely relieve the pains as happens in those cases for which *Nux* is the remedy, on the contrary, they persist a considerable time after the vomiting, in a greater or less degree. The eructation that sometimes precedes the vomiting is generally very loud, and sometimes becomes hiccup. The cardialgic symptoms occur either immediately after eating and drinking, or in rarer cases not till a few hours thereafter. Frequently, however, the pains and the whole paroxysm occur without ascertainable cause, as often happens after midnight. If this kind of gastralgia has already lasted some time, the patient gets a cachectic look, at the same time there gradually occurs a chronic catarrh of the stomach, often attended by occasional diarrhoea, which reduces the patient's strength. Under such circumstances we may easily suspect that the malady is caused and kept up by some organic disease (round ulcer, scirrhus), but this suspicion should not contra-indicate *Arsenicum*. In the above enumerated cases of this character, I found *Arsenicum* very useful."

Phosphorus.—When there is reason to believe that a perforating ulcer of the stomach is the cause of the cardialgia. There is occasional show of blood in the ejected matter; painless intervals brief; the emaciation and anaemia favor the suspicion of perforating ulcer.

If, however, there is no reason to presume upon organic lesion, *Phosphorus* is indicated by: excessive formation of acidity (the heartburn, sour eructation, sour vomiting), when, also, the vomiting occurred soon, often immediately after a meal, or rather of the nature of regurgitation of food, and the patient can not retain in the stomach a morsel of food. The thirst is not great and tormenting as in the cases corresponding to *Arsenic*, but yet the pains are aggravated by drinking. If the pains are of a gnawing character, and sometimes extended to the back,—if the gastric region is very sensitive to the touch,—if this sensitiveness is increased by walking,—*Phosphorus* was found by Meyer "a most successful remedy."

Colocynth.—The spasm of the stomach begins from two to three hours, or more, after a meal, especially if the meal consisted largely of sweets. The cutting pain is slight at first, but gradually increases, until it attains the greatest intensity. It now extends to the bowels, where the patient feels as if he were being cut with knives, and into the back, which seems to him to be broken. The patient feels as if he must vomit, without being able to do so at first; it is not until the lapse of considerable time that vomiting occurs, and then only of the food that has been taken. After the stomach is completely emptied,

the pain suddenly ceases, as if it were suddenly arrested, and the patient feels as if commencing a new life. Occasionally the vomiting is preceded by a violent rigor, with chattering of the teeth, goose-skin &c. The intervals between the attacks are usually very long, perhaps weeks or months. The patient can take any sort of food without injury until again unexpectedly the paroxysm makes its unwelcome appearance.

Predisposing Causes.—Eating too many sweets, mental emotions, especially vexation, before, during, or after a meal.

Bryonia.—Not generally successful in pure gastralgia. Meyer only succeeded with it when the case embraced also hepatic affections. In the case of a man aged twenty-seven, with hypertrophy of the liver, it succeeded. “There was violent pain in the stomach and scrobiculus cordis always soon after eating; eructations with the taste of the food; flow of water into the mouth; headache and vertigo. On examination nothing was found abnormal in the region of the stomach; but the liver was much enlarged below the last ribs, the abdomen tense, with dull (hepatic) sound on percussion. After the violence of the pains, and especially the excessive tenderness of the scrobiculus, had been diminished by Atropine, the hypertrophy of the liver diminished gradually under the use of Bryonia; and in proportion as the size of this organ diminished, the pains in the stomach decreased, and were at length completely removed by China.” Some irritability of the stomach remained.

10. GASTRODYNIA NEURALGICA.

Dr. Kissel says he cured eleven cases of this disease with Cuprum. They all occurred in women whose menstruation was sometimes normal, sometimes deficient, sometimes excessive. In some metrorrhagia preceded; several had already exhibited symptoms of gastric catarrh, after the removal of which the gastrodynia remained unaltered. This gave very severe pains in the praecordium, which extended from thence as far as the spine, and lasted one or more hours. Then the intermission was complete, till the fits returned after some hours. In most cases, the third and fourth dorsal vertebræ were painful on pressure. Scarcely any pains arose from pressure on the gastric region, which was neither hard nor tumid, but rather drawn in. Stool, urine, appetite, &c., presented nothing abnormal. All the patients had pale complexion. Cuprum-aceticum, as well as Sulphurica-ammoniatum soon brought relief, and, by persevering in their administration, complete cure. Lembke reports (in the Allg. Hcm. Zeitung, B. 45. No. 6), of a case of gastrodynia which had lasted four months, and was associated with nausea, oppression of the chest, trembling of the hands and feet,

and feebleness. This case was treated by Cuprum-metallicum, second trituration, as much as would lie on the point of a knife, four times a day
Other remedies, see page 516.

11. NERVOUS DISEASES OF WOMEN.

SYMPOTMS.—Low spirits, *nervous feelings*; on feeling the pulse there is perceived a tremor of the hand with acceleration and sharpness of the pulse, arising chiefly from mental agitation. When the attempt is made to encourage her she burst into a flood of tears. She says she has gradually lost health and spirits, is easily fatigued; her heart beats irregularly, flutters and palpitates; impressions are made on her mind disproportioned to their cause. She is prone to weep, has transitory feelings of alarm or dread. Both mind and body are in a morbidly sensitive condition; and general distress is depicted in her pale and dejected countenance.

In these cases there is usually some irregularity, some pain, or other difficulty of menstruation and leucorrhœa in the intervals. This condition has perhaps long existed without its influence being suspected and the patient has already taken a load of tonics without benefit, though they were expected to give strength and cure dyspepsia, which has been in many cases the head and front of the case. The dyspeptic symptoms are: flatulency, lasting for weeks or months; repeated vomitings, irregular or inverted action of the œsophagus; ascent of flatus obstructed in the throat (*globus hystericus*), almost threatening suffocation. Other nervous sensations: an inverted action attended with rumbling noise in the stomach or abdomen. An inverted action passing from the stomach up the œsophagus and pharynx, ending in a hysterical paroxysm, involving the brain and entire nervous system. This mysterious communication so closely allied to the aura epileptica may result from some irritation in the alimentary canal through the pneumogastric nerve. The breathing is also affected in a remarkable manner. In short, in these complicated nervous cases every nervous symptom may meet in an individual case, the whole uniting to compose the true hysterical paroxysm; and blended with all we may have various neuralgic sensations, varying from the slightest irritation to the most exquisite torture.

These neuralgic pains are often treated as inflammation; and always without success. The prominent of the local pains manifesting themselves in the ganglionic system of nerves distributed on the abdominal viscera are:

1. A pain seated under the left mammae;
2. A pain under the margin of the ribs on the left side;
3. In the course of the descending colon;
4. In the course of the ascending colon toward the right hypo-

chondrium, 5. In the abdomen generally; 6. Pain in the stomach; 7. Pain in the region of the kidneys extending down to the bladder.

It is not always easy to locate the pain so as to know precisely what organ is the exact seat of the pain. The site it most frequently occupies is under the left breast; it may last for weeks or months, often of doubtful location. In one aggravated case the patient died suddenly; the post-mortem revealed only a very delicate ring of enlarged blood-vessels around the cardiac orifice of the stomach, such as might be caused by a spasm.

2. The pain under the margin of the ribs of the right side is perhaps seated in the duodenum, as it is always aggravated by mercurial purgatives, and it is often attended by a jaundiced appearance of the skin. Though it is increased by pressure, and often treated as hepatitis, it is not inflammatory. The rest of these obstinate local affections are all neuralgic in character.

3. The pain in the stomach is a true *gastralgie*. The suffering it causes is the most extreme that can be imagined. It sometimes comes on suddenly, and the patient screams in agony, is sometimes drawn forward almost double, then intermits, returning in spasms. Though tender on pressure there is no inflammation.

Treatment.—1. Correct the morbid condition of the uterine system. 2. Remove or mitigate violent symptoms. 3. Restore tone and vigor to the general system.

Homœopathic Remedies, see pages 485, 508, 511.

It has been common to treat these debilitated subjects with tonics, in the vain hope of restoring strength. The results have been disgraceful to practical medicine. Dr. Gooch selected all the cases in which there was tenderness of the os-uteri, and prescribed, with much timidity and distrust, "general bleeding, cupping from the loins, leeches from the pubic region, purgatives, anodynes, warm baths, and the recumbent posture even for months at a time." No satisfactory results followed these depressing measures. Dr. Addison, of Gray's Hospital, attributed the nervous symptoms to a sympathetic irritation of the uterus reflected to the remote points where the pain is felt. On this idea he treated them all by local astringent lotions applied directly to the uterus itself. The lotion used must be one capable of producing a similar degree of irritation; and then in a proper degree of dilution it will be found homœopathic to the local irritation and the sympathetic nervous affections arising from it. The solution of Sulphate of Zinc just strong enough to excite a slight sensation of pain, is one of the best applications. If the pain be unpleasant, let the strength be diminished. In many cases cool water alone is the best application. All lotions should be frequently repeated, perhaps two or three times per day, ceasing to use them shortly before the menstrual period.

12. INJURIES OF THE SPINE.

Spinal Disease from Traumatic Lesion.—The spinal cord is as liable as the brain to derangements of nutrition, as well as to concussion or compression; while its intimate connection with every part of the organism, through nerves arising from, or communicating directly with it, will render any injury to its delicate structure almost certain to originate a serious train of morbid and anomalous symptoms. Thus:

Mechanical injury of the spinal column may cause either excess or deficiency of the cerebro-spinal fluid; and thus give rise on the one hand to dropsical effusion, and on the other to a partial atrophy or wasting away of the tissue. This latter form of spinal disease may run a latent course for months or years, the obscure cause of the infirmity dating back to some trivial injury sustained by the spine or skull, and which has passed by unnoticed, or has been entirely forgotten.

1. *Concussion of the Spinal Marrow.*—A common case is thus described:—A gentleman falls, without violence, with his back upon the hard ground or soft turf. There is no mental confusion, no cerebral disturbance—he feels a transient, peculiar sensation, called pins and needles, in his hands and feet; he gets up, walks or rides home; feels little or no inconvenience, makes arrangements for the morrow; but in the morning is unable to get up, because, he says, he is in pain all over, he feels sore and stiff, just as if he had been bruised, making it painful for him to move his limbs.

Now, what is the pathology of this case? It is possible that the spinal marrow, obeying the law of gravitation, may, as the body falls, precipitate itself in that direction—may fall backwards towards the arches of the vertebrae, and be itself concussed in this way; or the little filaments of the sensitive and motor nerves, which are delicately attached to the spinal marrow, may for the moment be put in a state of extreme tension; because, as they pass through the inter-vertebral foramina, they are fixed there by the dura mater, and if the spinal marrow be dragged from them, the intermediate parts must necessarily be put upon the stretch, producing at the same time the “pins and needles sensation.” This patient has not caught cold, has no rheumatism; nor has he been bruised, or received any blow where the pain is felt. The stiffness he feels is not the result of *local* injury. The sensitiveness of the surface which creates pain on being touched, and the stiffness which he experienced are the result of some structural disturbance of the motor, as well as of the sensitive nerves, or of some mischief in the interior of the spinal marrow; but the precise nature of this mischief is not always ascertainable. When the spinal marrow has been impaired by a blow, or direct force, or by a shake, or by a to-and-fro movement, as occurs in railway collisions, the spinal marrow is protected by the long

the head were elongated. It may also occasion violent cerebral congestion, flushed, bloated face, changeable mood, &c., as well as weakness and trembling of all the limbs. It seems to act in a specific manner upon the cerebellum, regulating its function of coördinating or associating the different voluntary movements. Dr. Ludlam prescribes it in the second attenuation.*

2. CONGESTION OF THE SPINAL CORD.

Treatment.—Brown-Sequard† says: “the two remedies most powerful in diminishing congestion of the spinal cord are Belladonna and Ergot of Rye. These two remedies are powerful excitants of unstriped muscular fibres, in blood-vessels, in the uterus, in the bowels, in the iris, &c. Both of them dilate the pupil; both are employed with success to produce contractions of the uterus; but each of them has more power in certain parts than the other. So that we find Belladonna acting more than Ergot on the blood-vessels of the iris, (which is the principal cause of dilatation of the pupils,) on the blood vessels of the breast, (which is the principal cause of the cessation of the secretion of milk,) on the muscular fibres of the bowels, (which is the mode of its action in strangulated hernia,) on the spincter of the bladder, which is one of the causes of success against nocturnal incontinence of urine, &c. Ergot “acts more than Belladonna on the muscular fibres of the uterus, on the blood-vessels of the spinal cord,” &c.

“The excitability of smooth fibres, as well as that of striated muscles, varies exceedingly in different parts of the body. An exciting agent, as galvanism, cold, heat, or Belladonna and Ergot, will produce powerful contraction in some places, and hardly any in others. The smooth fibres of the uterus contract more than those of the bowels or the bladder, and less than those of certain blood-vessels when stimulated by galvanism; the smooth fibres of certain blood-vessels contract more than those of the uterus under the excitation of cold; still more, the blood-vessels of the cerebral lobes and the face, which contract so much when their nerve (the cervical sympathetic) is irritated, contract but very little when excited by Belladonna and Ergot, while these two excitants produce powerful contractions in the blood-vessels of the spinal cord.”

“Not only have I seen the diminution in the calibre of blood-vessels of the pia-mater of the spinal cord taking place in dogs after they have taken large doses of Belladonna or Ergot of Rye, but I have also ascertained that the reflex power of the spinal cord (most likely as a

* N. Am. Jour. Homœp. Vol. X., p. 690.

† Lecture on Myelitis, Spinal Meningitis and Spinal Congestion.

consequence of the contraction of the blood-vessels) becomes very much diminished under these two remedies, which in so doing act just in the opposite way to that of Strychine."

A knowledge of the above facts led Brown-Sequard to employ Belladonna and Ergot of Rye in cases of paraplegia, due to a simple congestion or a chronic inflammation of the spinal cord and its meninges, and with an encouraging degree of success. "It is now certain that these agents have really a great power in diminishing the amount of blood in the spinal cord and its membranes."

Treatment of Irritation of the Vaso-Motor Nerves of the Spinal Cord.—M. Brown-Sequard says (*Lecture, &c.*) : "Led by the view that erosions, ulcerations, and sloughs on the nates, sacrum, &c., are chiefly due to an irritation of the vaso-motor nerves, producing alterations in the nutrition of certain parts of the skin, I have thought that alternate applications of cold and heat to the parts where there is a threatening of sloughing, by acting on the blood-vessels, so as to produce in them considerable contractions and dilatations, might prevent the effects of the irritation of the vaso-motor nerves in the spinal cord." In cases of fracture of the spine occurring in animals, followed by myelitis, he tried "the alternate application of pounded ice in a bladder for thirteen minutes or less, and followed by a warm poultice for an hour. The success of this treatment rendered the correctness of the theory probable.

Lateral Curvature of the Spine.—Pathology.—This is exceedingly simple. "It is invariably produced, in the first instance, by the unequal action of the muscles, generally, but not always accompanied by muscular weakness.

"The spinal column consists of twenty-four vertebrae—little blocks of bone, piled one on top of the other, with the intervening cartilages as elastic cushions between each, and held strongly, but not immovably, together by various ligaments, the whole forming a very flexible column, with little power to sustain itself in the upright or any other position in which it may be placed, without the aid of the muscles. The spinal column is necessarily so formed, in order to allow flexion in every direction, to accommodate the various motions of the body, and to secure pliability and elasticity in connection with firmness and strength—qualities, in this particular instance, necessary to coexist in the same organ; the latter to enable it to sustain the burdens imposed upon it, and the former to secure immunity from shocks and the operation of counter forces.

"The muscles of the trunk secured to the pelvis below as a base, are attached all along the spine as 'guy-ropes'; and in several layers and groups, by their coördinated action sustain the spine in place, or move about in any required direction, in the most symmetrical and perfect

manner. Excepting the slight curvature forward in the lumbar, and backward in the dorsal regions, the position of the spine and shape of the spinal column at any moment in health depends on the muscles.

"When the muscles act in harmony—the different groups being properly set off by their respective antagonists—then the spinal column whether at rest or in motion, is always where it should be. But if the action of certain muscles is not properly antagonized, for some muscles do not act with the same degree of force as their mates, then this harmony and coördination are lost, and the spine makes a greater flexion toward the point where is the stronger muscular action, if this action is in the transverse direction, as of the scapular muscles acting at the *middle* of the flexible column; but *from* the stronger muscular force when acting from one side at the *ends* of the flexible column longitudinally. That is, the *spinal* muscles act like a string to a bow; and if they contract more on one side, the ends of the spine are made to approximate towards that side, making the spine to swell out towards the other side; but the scapular muscles, acting at the middle, would draw the spine towards themselves, and thus this unequal muscular action may cause the spine to deviate to the right or left, to or from the stronger muscles, according as they may happen to be those that act longitudinally or transversely." (Ch. F. Taylor, M.D., 1861.)

GENUS X.—MYOTICA.—AFFECTING THE MUSCLES.

Theory of Muscular Contraction and Convulsive Diseases.—The commonly-received opinion respecting muscular action is, that "muscle is endowed with a vital property of contractility, and that the state of contraction is brought about when this property is called into action. That is to say, when the muscle contracts, this vital property of contractility is supposed to be roused or excited, or *stimulated* into action; and the more the muscle contracts the more is this property supposed to be acted upon." A doubt was thrown over the correctness of this opinion by Charles Bell, who said that he had been led to suppose that muscular *relaxation* might be the act, and not contraction; and that physiologists, in studying the subject, had too much neglected the consideration of the mode by which relaxation is effected. D. West, in 1832, (*London Medical and Surgical Journal*, Vol. I,) said, "nervous influence is imparted to muscular fibre for the purpose of restraining its contraction; and the action of the will, and of all other disposers to contraction, is simply to withdraw for a while this influence, so as to allow contractility (the peculiar property of nervous force,) to show itself." This view of the modus operandi of the motor-nervous influence is adopted by Dr. Charles Radcliffe, in the *Gulstonian Lecture* for 1860. He holds that "the true type of muscular contrac-

tion is to be found in *rigor mortis*—that the muscle contracts, not because a vital property of contractility has been roused into activity by a stimulus, but because some antagonizing influence has been withdrawn, which previously prevented the free action of common molecular attraction in the muscular tissue.” Professor Duges, of Montpellier, France, maintains that muscle contracts in virtue of its elasticity, just as a piece of gum-elastic may contract when set free from a previous state of extension. Professor Matteucci, of the University of Pisa, in 1847, advocated the same general idea. In 1848, Dr. Louis Mackall, of Georgetown Heights, Columbia, S. C., endeavored to show that nervous influence determines a state of active elongation in muscle, and that contraction proceeds from the withdrawing of this influence. The protrusion of the tentacles of the snail and bryozoon, of the tongue of the chameleon, of the head and limbs of the tortoise, the movements of muscular vessels and tubes—even muscular movements generally—are unintelligible without the aid of this hypothesis. He thinks, however, that contraction, as well as elongation, are *vital* states of the muscle to which there is nothing analogous, either in physics or chemistry. In 1851 experiments were made by Mr. Brown-Séquard, which seemed to show that the influence of the blood of the animal system is exercised in counteracting the *rigor mortis*, which occurs when the vital influence is withdrawn. Later observations led him to think “that the office of *arterial* blood is to minister to the contractile and other forms of power; and that the office of the *nervous* blood is to supply a stimulus by which the power derived from the red blood is called into action.”

But all observation disproves the old theory that referred muscular contraction to any stimulation through the blood, or otherwise derived from the nervous system. The permanent contraction which comes on sooner or later in all paralyzed parts, is not in any way dependent on nervous influence. After the spinal cord has been destroyed in the lumbar region of a pigeon, says Dr. Radcliffe, the muscles of the paralyzed parts are at first soft; in a few days they become somewhat hard; in a few days more they pass into a state of permanent contraction, by which the legs are kept extended and divergent.

The cause of this contraction is the suspension of the action of the nervous system; and the contraction is permanent, because the action of the nervous system is never restored.

The bearing of these facts on the pathology and treatment of convulsive diseases is well illustrated in the convulsions produced by haemorrhages, which we cannot believe to be associated with undue stimulation on the part of the nervous system. The vessels are at this time almost empty of blood; the heart is nearly still, and the action of the nervous system must be at the lowest point compatible with the

existence of life. Recent observations render these experiments still more important and conclusive, Drs. Kussmaul and Tenner, (*Untersuch. 2. Naturlehre des Menschen u. d. Thiere, von J. Moleschott*, Vol. II. Frankfort, 1857), passed threads behind the common innominate and the left sub-clavian arteries of a rabbit, and left these threads so that they could be tied and untied in a moment. On tying the ligatures, the animal was violently convulsed; about one minute later, when the convulsions were raging at their height, by untying the ligatures the convulsions were instantly suspended. Thus it is seen that convulsion is instantly brought on by preventing the flow of blood to the brain, the medulla oblongata, the upper part of the spinal cord, and the cervical ganglia of the sympathetic nerve; and these convulsions are instantly suspended by allowing the blood to return to these organs. Convulsions, then, seem to be connected with a state of inaction of one or more of the nervous centres named.

In another experiment, the ligature was placed around the neck of the aorta a little beyond the opening of the left subclavian artery. The blood now, instead of being cut off from the head and neck, was cut off from all the rest of the body below. As the condition of things produced was the opposite of what existed in the former experiment, the result was precisely the opposite. There was immediate paralysis of the part behind the ligatures, but no convulsion, or any thing approaching to it; and it was shown that this absence of convulsion was not due to paralysis of the spinal cord from want of blood—for on compressing the carotids, so as to prevent the flow of blood to the brain the animal was instantly seized with violent convulsions.

An indirect argument in support of the inferences drawn from these experiments is derived from the fact "that drowsiness, and not convulsion, is the consequence of that capillary injection of these centres, arising from the division of the sympathetic motor in the neck, or of that venous engorgement brought about by tying the jugulars, or of that double arterio-venous congestion which happens when the sympathetic nerves are divided in the neck, and the jugular veins tied in the same animal."

Recent Discoveries and Views on Reflex Action.—So far as this mode of action concerns only the muscles of motion—voluntary and involuntary—the subject has been exhaustively worked out by Marshall Hall and his disciples. But later researches, especially those of Dr. Brown-Sequard, have led us to extend reflex action also to sensitive, vaso-motor, and tissue nerves, and have thus brought a large number of facts in physiology and pathology, hitherto imperfectly understood or vaguely styled "sympathetic," under this head. From the researches of Dr. Brown-Sequard, (see his Lecture 10.) It may be easily seen that an irritation conveyed along a centripetal nerve-fibre to the crano-

spinal axis, may be reflected from it in four directions. 1st. Upon a musculo-motor nerve, causing contraction of a muscle or muscles. 2d. Upon a sensitive nerve, giving rise to neuralgia. 3d. Upon a vaso-motor nerve, causing a contraction of blood vessels. 4th. Upon a tissue nerve, producing a secretion or an alteration of nutrition, as the tissue it supplies is glandular or simple. It is also easy to perceive that each of these modes of reflex action may play an important part in the normal and abnormal processes of the organism.

1. Of the abnormal actions falling under the first head, we see "Spasms," partial or general, produced by eccentric irritation. The vomitings of pregnancy, the convulsions of dentition, the laryngismus stridulus caused by enlarged bronchial glands, and the spasmodyc asthma of gastric irritation, are instances on a lesser scale; while the frightful spasms of the throat, or of the whole frame seen in hydrophobia and traumatic tetanus owe their origin to the same cause. That the stoppage of the heart's action which results from a sudden blow upon the stomach, or a rapid draught of cold water when heated is due to a reflex excitation of the *vagus* through the splanchnic nerves, has been shown by the experiments of Dr. Brown-Sequard. For after dividing either the splanchnic nerves, the spinal cord, or the *vagus*, no gastric irritation could affect the action of the heart.

2. It is not so common for a centripetal irritation to be reflected on a sensitive nerve, yet cases are on record in which reflex neuralgia has been produced by a cicatrix, a stricture of the urethra, a carious tooth or an injury of a nerve. The supra-orbital hemicrania caused by gastric irritation falls under this head."

3. If the centripetal irritation be reflected upon a vaso-motor nerve, we shall have a contraction of the blood vessels supplied by it. It is improbable that such a process plays an important part in the normal actions of the organism; but it is a fruitful source of many forms of disease. We have seen that excitation of the motor nerves of a gland in a full state of activity will immediately check its secretion, by cutting off the normal supply of blood. Now considering the nervous centres as so many glands generating nerve force from the blood, and transmitted through the nerves to its destination, it becomes obvious that a sudden or chronic cessation of their activity may be produced by contraction of their blood vessels by a reflex excitation. Thus we may have from this cause (*a.*) loss of consciousness; (*b.*) paralysis; (*c.*) anaesthesia, according to the functions of the part of the nervous system affected; (*d.*) sudden contraction of the arteries of the brain proper, by an irritation sent, appears in all cases to be the starting point of an epileptic fit. The extreme pallor of the face which appears as the patient falls, results from the same cause. The same irritation, falling

upon the laryngeal, cervical and thoracic respiratory muscles, brings them into a state of tonic contraction, thus impeding the arterialization of the blood. From hence proceeds the purple hue which succeeds the primary pallor of the face and the general clonic convulsions throughout the frame. In the so-called *petit mal* the cerebral arteries alone feel the irritation and loss of consciousness, without laryngismus or convulsions, results. A less degree of contraction will give rise to the vertigo to which epileptics are so subject.

Modus Operandi of Counter Irritants in removing Disease.—Each component element of the body maintains a sympathetic relation with the other parts of it. There is no organ and no tissue situated beyond the pale of this influence. As the natural consequence, when one organ is morbidly affected, the disease is reflected upon others which are distant; on this account, local injuries are quickly followed by constitutional symptoms. A fractured limb excites fever and delirium. An irritated wound propagates its irritation to the spinal cord and invokes traumatic tetanus. The troubles of dentition are not confined to the pain of the distended gum, but excite diseases in almost all parts of the body. A large and superficial blister, such as is frequently produced by a burn or scald by reflecting its irritation upon the upper portions of the intestines, may terminate fatally by ulceration and perforation of them. The local irritation occasioned by the presence of intestinal worms may escape observation and yet be sufficient to produce epilepsy. A suppurating breast has been known to be the exciting cause of consumption, into which state the patient has suddenly lapsed. These lessons do not instruct us to hope that a local irritant will attract any other elements to itself; on the contrary, they demonstrate that injuries primarily of a local character, through means of the sympathetic system, are reflected upon distant and healthy parts, in which secondary diseases are established. When the physician, therefore, has recourse to a counter-irritant, it is not for the purpose of attracting the disease to the spot artificially. The application of the Spanish fly has nothing whatever to do with the morbid elements which may be present as the result of the natural disease; it is healthy serum, which can be called to the surface at any time, and in any person willing to submit himself to the disease-producing powers of cantharides. The popular impression is adverse to this. The error into which they fall is a natural one, and not unfrequently medical men play upon their credulity and encourage them to regard the redness in the one case and the blister in the other, as a certain amount of the disease brought to the surface." But "when an artificial disease is purposely developed in the hope of relieving the sick, it must be reflected upon an organ already diseased, that organ is at once placed under the influence of two morbid processes, namely the pri-

mary or natural disease, and the secondary or artificial one." But, in accordance "with the well known physiological law" which even the Lancet recognizes as true, no two actions can go on in the same part at the same time, and the greater must destroy the lesser. "The curative action of a counter-irritant is therefore equivalent to the direct action of a drug-specific to the part. In the one case we depend upon a drug which from experience is known to exercise a specific action on the diseased organ; in the other we excite an artificial disease in a distant part, and hope that its influence may be reflected upon the disease which we wish to cure; counter-irritation, although uncertain, when successful, is certainly homœopathic in principle."—(Drummond, 65, Holcombe, *North Amer. Jour. Homœopathy*. Feb. 1858, Art. XXVII.)

1. TETANUS.

TETANTS.—This disease consists of violent tonic spasms of the voluntary muscles, the powers of sensation and of thought remaining unimpaired. When the diseased manifestation is confined to the muscles of the jaws and of the throat, the affection is called trismus or locked-jaw.

We understand by the term *tetanus*, sudden morbid contractions or cramps of many muscles of the body, with rigidity and loss of voluntary motion in the affected parts. This morbid contraction and rigidity may affect the muscles of almost every portion of the body, or it may be confined to the muscles of a single part, like the lower jaw, when the affection receives the name of *trismus*; or to the extensors of the back, giving rise to *recurvatum* of the body, when it is termed *opisthotonus*; or to those of the front part of the body, causing *incurvatum*, termed *emprosthotonus*; or the muscles of the side, causing a lateral curvature, and called *plearthonus*.

Tetanus is much more common in hot than in temperate latitudes, and generally selects for its victims individuals of a nervous and irritable temperament, or those whose constitutions have been impaired by the abuse of stimulants, or exposure to a vitiated atmosphere.

There are two varieties of tetanus, the *traumatic* and the *idiopathic*. The usual exciting causes of the former are, punctured and lacerated wounds, causing injury or partial division of the nerves; and of the latter, general debility of the nervous system from long-continued illness, or protracted derangement of the different functions of the organism.

DIAGNOSIS.—This malady generally commences with uneasiness at the præcordia; stiffness and tension in the muscles of the back of the

neck, back and loins, and some difficulty in deglutition and in articulation. This contraction and stiffness gradually increases; the sensation of uneasiness in the chest becomes changed to violent and painful contractions about the ensiform cartilage; the pains and cramps extend to the back, jaws, and limbs; the appetite fails; the countenance assumes a flushed and anxious appearance, the bowels are constipated; the mind remains sound until the last stage of the disease, and the body will be rigidly drawn into such a position as will enable us to decide what particular class of muscles are affected, and which of the varieties of tetanus is present.

Traumatic tetanus is always a dangerous affection, but hopes of cure may be entertained when unusual pains in the wound or cicatrix, with pains extending along the limbs in the direction of the contracted parts, occur simultaneously with the first symptoms of the complaint. But if the symptoms continue to make steady progress, while the original wound is cicatrized, and no pain or disturbance is experienced either at this point, or extending from it the case may be looked upon as highly dangerous.

Idiopathic tetanus proceeds from constitutional causes, and is far less dangerous than the *traumatic* variety. Its approach is also more gradual, and attended with less pain, but when the contraction and rigidity of the parts takes place, they remain in this condition a longer time than in the other form of the disease. The violent contractive pains about the ensiform cartilage, and in the nape of the neck which are so characteristic of traumatic tetanus, are also absent in this variety. Indeed, we have seen cases where no pains or uneasy sensations were experienced in any part of the body, except from the constrained parts affected with the morbid contraction.

CAUSES.—Punctured and lacerated wounds which partially divide one or more nerves, are the most common of causes. The admission of cold air into wounds, sudden checks to the perspiration after long and fatiguing exercise under a hot sun; the irritations of splintered bones, or other foreign substances in contact with nerves and tendons; amputations and blows upon the spine, are all occasional causes of traumatic tetanus.

The exciting causes of idiopathic tetanus are: suppressed menstruation, or other habitual discharges, low fevers, over-exertion of mind or body, too close confinement in small and ill-ventilated apartments, sitting in unnatural and constrained positions; tight lacing; contused, lacerated, or punctured wounds. It is said to follow more frequently wounds in which the nerve is partially divided or lacerated. Plenk relates a case of the disease excited by the insertion of an artificial tooth. Others have caused it by passing a ligature round an artery so as to include a nerve.

PATHOLOGY.—No pathological changes have been noticed in the brain or spinal cord which can be said to be the cause or consequence of the disease. It has been called “functional disease of the spinal cord” for want of a better name. In *traumatic* tetanus, the minute nervous twigs have been discovered diseased at the seat of the wound Mr. Erichsen (on *Tetanus*, *Lancet*, Vol. I., 1859, p. 855,) says: “There is in *traumatic* tetanus, always a certain condition of the nervous system to be met with, if carefully looked for, namely, an unhealthy state of the nervous branch, or twig, running from the wound. This twig will be found implicated in some way, congested, inflamed, infiltrated; its neurilemma thickened, softened and discolored, often for a considerable distance from the wound. I have never failed to find this when it has been carefully looked for. In one instance (which is quite common) a cutaneous branch was found lying bare, and inflamed in the bottom of the issue-wound.”

The mischief commences in a minute nervous twig, and by reflex action those powerful changes are effected which characterize the disease. Though the disease be called lock-jaw, or trismus, this symptom is not always the first striking symptom, though it is an early one. It is often manifested by twitching of the muscles of the trunk or extremities before lock-jaw is developed. It then becomes a prominent symptom. The explanation of this early appearance of this local symptom is thus given by Dr. Hilton, of Guy’s Hospital: “Experiment indicates that the gray matter of the interior of the spinal marrow is probably the local seat of tetanus. The fifth nerve, or nerve of mastication—the one involved, and which must be the direct cause of trismus—has a larger connection or continuity with the gray matter of the spinal marrow than any other nerve in the human subject; and in this fact, perhaps, lies the explanation of the early symptoms of lock-jaw; and no doubt the firm closure of the lower upon the upper jaw depends on the relative greater strength of the muscles closing the mouth, as compared with those depressing the jaw. It is curious to observe the gradual ascent of the cause of tetanus—to see how the disease encroaches upon the higher or anterior nerves of the base of the brain, ultimately reaching the third cerebral nerve. Then the muscles which are supplied by this nerve become tetanic and cause retraction of the eye-balls, deep into the bony orbits, so far that in some cases, especially animals, we almost lose sight of the eye as the tetanus goes on.” This symptom is one of great danger, for it points to the great extent of the structural lesion of tetanus, though the exact nature and character of the pathological state is not yet explained.

Among the remedies to which the cure of individual cases have been attributed are: Tobacco, Nicotine, Aconite, Atropine, Belladonna, Conium, Henbane, *Cannabis-indica*, Opium, Camphor, and stimulants.

Dr. Williams gives a case cured by 110 bottles of Port wine in forty-two days. Mr. Ilott cured a case with two gallons of brandy in eight days. Mr. Simon cured a case in St. Thomas's Hospital, in 1858, with *Nicotine*. Patients have been cured by division of the trunk of the affected nerve high up in the limb, so as to act beyond the sphere of local irritation. This is not always practicable, and when tried has sometimes failed. (Mr. Ferguson, of King's College Hospital. *Lancet*, Nov., 1860, 412.)

Aconite.—A case at the Middlesex Hospital recovered under the care of Mr. De Morgan, treated with *Aconite*. A boy aged fifteen, trod on a rusty nail, which pierced the thin shoe and penetrated the ball of the foot. The nail was extracted, the wound bled but little, and healed in a few days. On the seventh day stiffness commenced in the neck and lower jaw; he entered the hospital on the seventeenth day, with well-marked rigidity of the muscles of the neck and jaws, abdominal muscles tense; pain in back and neck; sleepless for two nights; bowels natural; perspiring, pulse 80, moderately full. A hard cicatrix in the sole of the foot was excised. Strychnine, in doses of one-tenth, and then of one-twentieth of a grain was tried; but the spasms increased. There were twitchings in the thighs, great difficulty of respiration, finally severe opisthotonus.

On the twenty-first day of the case, tincture of *Aconite* was given, five minims every two hours, then eight minims. This continued seven days; dose then given every four hours, and next day every six hours. The diet throughout was the most nourishing that could be given, consisting of beef tea and similar articles. Turpentine enemas were used; but the severity of the paroxysms diminished immediately after the *Aconite* was given. He progressed gradually and slowly. First the general spasms and opisthotonus ceased, then the convulsive twitchings of the extremities, which lasted only two or three minutes longer. By the thirty-second day he could sit at the table and separate his teeth half an inch; he ate and slept well; expression of the face almost natural; fifty-third day could walk about; some stiffness still visible in the jaws. (*Lancet*, 1860, p. 414.)

HOMEOPATHIC TREATMENT.—A preliminary step in the treatment of tetanus should always be to remove, as far as possible, whatever causes may have operated towards inducing the disease, or which may continue to exert an irritating effect after its full formation. The causes of this character are: the presence of irritating spicula of bone, of needles, of dirt, or rust, or any other foreign substance, in contact with the nerves and tendons; abuse of stimulants, the wearing of too tight clothing, foul air, exposure to sudden changes of temperature, especially intense heat, to coldness and humidity. When there is reason to suspect the presence of a foreign body in a cicatrized

wound, after the appearance of tetanic symptoms, we should at once cut down and endeavor to extract the obnoxious substance ; and in case nothing can be found, to apply spirits of turpentine, or some escharotic, in order to insure suppuration in the wound. This important surgical resource should always be resorted to in cases of this description, for it is not an uncommon occurrence to perceive the immediate disappearance of incipient tetanic symptoms on the removal of a foreign substance from the wounded part.

The remedies most appropriate for the treatment of tetanus are : *Nux-vomica, Belladonna, Arnica, Stramonium, Cicuta, Hyoscyamus, Opium, Pulsatilla, Sulphur.*

Nux-vomica, from its decidedly specific action upon the spinal marrow, and its membranes, as well as from its pathogenesis, and the appearance of individuals who have been poisoned with it, is evidently a remedy of importance in this dangerous malady. It is especially called for when the spasms are frequent and short, consciousness is perfect, and there are cramp-like pains in the region of the stomach, constipation, and loss of appetite, and when the patient has been addicted to the abuse of stimulants.

When we find great rigidity of the extremities, contraction of the thumbs or fingers, wild or fixed look, painful and difficult respiration and deglutition, we may give *Stramonium* in alternation with *Hyoscyamus* or *Cicuta*.

Many writers speak in favorable terms of warm baths in the treatment of this affection. We have seen the most unequivocal advantage follow general bathing, and a thorough application of fomentations to the affected parts, and to the spine. We can call to mind two cases where life was apparently saved by the persevering application of these hot fomentations, together with frictions along the course of the spine.

We take occasion in this place to suggest to the profession the use of the saliva of rabid animals as a remedy in this affection. It has been found by Majendie and Breschet, that if the saliva be introduced under the skin, or into the blood of animals, that the animal so impregnated contracts the *hydrophobia*. Why should it not then be employed in those maladies which are characterized by symptoms similar to those of rabies ?

Other remedies which may demand attention are : *Veratrum, Moschus, Phosphorus, China, Ignatia, Lachesis, Acid-hydrocyanic, Camphor, Plumbum.*

ADMINISTRATION.—We advise from the third to the sixth attenuations in this affection ; a dose every hour until the system responds in a satisfactory manner, after which we must be governed by circumstances.

Carbonate of Potash.—Fritz (*Hufeland's Jour.*, 12, p. 116,) saw a species of *tetanus* produced by a bath impregnated with *Carbonate of Potash*, and A. Von Humboldt, by the application of a solution of *Salt of Tartar*, increased the irritability of the muscles to such a degree as to excite tetanic convulsions. The curative power which caustic potash exercises in all kinds of *tetanus*, in which Stübz and others have found it so useful, could it be accounted for in a more simple or rational manner than by the faculty which this alkali possesses of producing homœopathic effects? (*Hahnemann.*)

Woorara—Curare.—Woorara is known as an energetic poison when introduced into the blood, though twenty or thirty times the same amount may be introduced into the stomach without injury. Dr. Harley says, (*Braithw. Retrosq.*, No. 41, p. 48,) Its superiority consists in its peculiar power of paralysing the *motor* and not the *sensory nerves*. It can be so administered as to destroy the power of voluntary motion without impairing the consciousness of the animal. He would, therefore, give it to animals in such quantity as is sufficient to paralyze all the muscles except those of respiration. In this way he was able to allay the tetanic spasm, without destroying the intelligence, or arresting the performance of the organic functions; and, by thus continuing the moderated action of Woorara until the kidneys have time to eliminate the strychnine from the system, he has been able to save the life of the animal. In *tetanus* we should endeavor to keep the spasms from killing the patient by their violence, until the morbid state that called them into play has exhausted its powers.

Woorara or Curare has lately been brought into notice as a remedy for *tetanus*. Mr. Lloyd, of St. Bartholomew's Hospital, tried it in the case of a boy, aged ten years, attacked with trismus seven days after inflammation of the left great toe from a contusion. The genuine Woorara was introduced hypodermically every fifteen or twenty minutes, beginning with one-twentieth of a grain, and gradually increasing the dose, until a grain had been injected two or three times, to six grains in all. Though the spasms were diminished and the boy able to swallow, and the spasms did not come on after drinking; yet he suffered so much from the puncturing of the skin that the treatment was discontinued, and the boy died the next day.

Nux-vomica as an antidote for Curare.—The conclusion we reach, after analyzing the results of the experiments of Messrs. Martin, Magron, and Buisson* are "that Curare and Strychnine differ in their action only by shades, which generally disappear with the doses employed and the mode of administration." Curare, like Strychnine, determines convulsions by augmenting the excitability of the cord. Recent ex-

* U. S. Jour. Homœop. Vol I. p. 16., Mater. Med.

periments by Signor Vella, of Turin, also show, that so far as either of these two agents is a similimum of the other, just so far it is an antidote for the train of morbid phenomena which it is capable of producing. This is just what a homœopathist would expect to find, and the French Academy have listened to the details of his experiments. He says he had learned from Bernard's experiments that the effect of Curare (or Woorare) was to *produce paralysis of the motor nerves*. He has therefore been trying for several years to cure paralysis with it. In a series of ninety-seven experiments, he poisoned dogs by compelling them to swallow doses of Strychnine known to be fatally poisonous, and then attempted to antidote this poison by throwing small quantities of Curare into the jugular vein, whenever the tetanic symptoms showed themselves; and he thus continued his experiments till the poisonous power of the Strychnine was exhausted, and the animals completely recovered.

In a second series of experiments, the two poisons were mixed in certain determined proportions, and no effect whatever was produced, and the life of the animal was undisturbed. When Strychnine alone (two-thirds of a grain of hydrochlorate of Strychnine in six drachms of water) was injected into the stomach of a middle-sized dog, fasting, it produced in fifteen minutes violent tetanic convulsions. A solution of Curare was then injected into the jugular vein, and the muscular spasms ceased. When the spasms returned the Curare was repeated in succession until the dose of two-thirds of a grain dissolved in half an ounce of water had been taken into the circulation. The whole experiment lasted three hours. The dog was well. Three days afterwards the same dose of Strychnine given to the same dog, without the antidote, and the dog died in sixteen minutes.

In a third series of experiments Sig. Vella employed a mixture of one-thirty-third of a grain of Strychnine, and one-fourth of a grain of Curare in fifteen minimis of water. Injected into the jugular vein of a large dog, it produced no effect. At another time the same dose of Strychnine, not antidoted by Curare, was given, and the animal was killed in the space of ten minutes.

The experiments of Signor Piria, a chemist of Turin, show that the antidotal effect of these two deadly poisons on each other does not depend on the chemical decomposition of one by the other; for, on mixing them, no chemical decomposition takes place, "nor is any appreciable alteration noted; on the contrary, the two drugs preserve their individuality indefinitely." This fact, says the correspondent of the Lancet, "renders the *modus operandi* of these, in the process of mutual neutralization, all the more obscure." We regard them as *dynamic*, not merely *chemical* agents. And now, having seen that one is almost a perfect similimum of the other, we find pleasure instead

of perplexity in witnessing the additional power of the one over the deadly effects of the other. See *U. S. Jour. Hom.*, Vol. II., p. 584.

Strychnine—Case of Poisoning.—Dr. G. Bennett, Sydney, Australia.—A lady, aged forty-two, took a large quantity of Strychnine with design to poison herself. Dr. Bennett gave Sulphate of Zinc, and tried to use the stomach-pump, but the violence of the spasms prevented. They increased to such an extent that life appeared extinct; face and hands livid; eye-balls protruded; violent opisthotonus; pulse imperceptible. Tincture of Iodine in water was given in one of the intervals. Spasms returned with violence; she was thought to be dead; when able again to swallow, thirty drops more given in ten or fifteen minutes from the first. Another fit less severe followed. Iodine-tinct. thirty drops repeated in ten minutes more. The convulsive fit now ceased. In ten minutes more, violent vomiting came on, was promoted by warm diluent drinks, till the stomach was emptied of the poison. The author thought the Iodine acted by forming with the Strychnine, the insoluble compound of Hydro-iodate of Strychnine, and by relieving the system from the spasmody action of the poison upon the spinal nerves, the emetic previously given was enabled to act. A few slight twitches of the muscles were afterwards noticed, but she continued improving. The patient had uttered no cries of pain, and said she had only felt inconvenience from the spasmody drawing of the legs so rapidly downward; she said she was conscious of all that transpired, but could not speak.

Camphor.—Dr. Paddock, of London, says: “The antidote for Strychnine is Camphor. Five grains dissolved in mucilage puts a stop to the tetanic spasms, and gives time for the action of the stomach-pump, or emetics, if any poison has been retained. (*Lancet*, Dec. 31, 1859, p. 66.)

*Strychnine.—Tests of—*I. *Class, Color, Tests,* depending on the color produced by the action of different re-agents on Strychnine. 1. Bichromate of Potash, discovered by Lefort. 2. Ferro-cyanide of Potassium, discovered by Dr. Davy. (*Braithw. Retros.*, No. 41, page 303.)

These articles in conjunction with strong Sulphuric-acid, produce with Strychnine a most beautiful purple color, and are the most delicate test yet discovered. De Vry and Der Burg, of Rotterdam, say they are able by this means to detect the sixty-thousandth part of a grain of Strychnine.

In the search for Strychnine in the contents of the stomach or other tissues of the body, the Strychnine is first separated from the other structures with which it is mixed up. This has been recently effected by the use of chloroform. By this means Strychnine has been detected in the blood, liver, stomach, and tissues of animals poisoned by

it. In one case the animal was interred for two years; showing that the Strychnine had not undergone decomposition as had been hitherto supposed. De Vry and Der Burg conclude: That if death has been caused by Strychnine, this poison can only be detected in the body provided it has been administered in quantity more than sufficient to cause death; but if the poisoning by Strychnine has been chronic, and has resulted from a quantity not greater than just necessary to cause death, it cannot be detected by the chemical examination of the stomach and intestines; and that it is probable that that part of the Strychnine which has destroyed life is decomposed in the living body.

Marshall Hall's Test.—Physiological effects of Strychnine.—A frog was placed in a very dilute solution of Strychnine; in a short time it became tetanic and showed evidence of Strychnine poisoning. He found that one-four-hundredth part of a grain of Strychnine dissolved in six drachms of water caused the frog to be violently tetanic; and in two other experiments he detected quantities, in one case of one-five-hundredth, and in another of one-one-thousandth of a grain of Strychnine. Dr. Harley, of the University of London, says the physiological test is the most reliable one known. He applies it by injecting the fluid into the thoracic duct or the abdominal cavity. When the poison reaches the lungs, it is rapidly absorbed through the pulmonary capillaries. He says a solution containing so small a quantity as one-sixteen-thousandth part of a grain of the pure alkaloids injected into the lungs of a small frog, caused it to be violently tetanic in nine and a half minutes, and it died in two hours; though frogs may be tetanized by other means than by Strychnine, this test is the most delicate known, and of great value when employed in connection with others.

MOTOR NERVES.—Belladonna.—It acts as a depressor or paralyzer; action only local, paralyzes the stomach, relaxes the sphincters; does not produce general paralysis.

Homeopathic use.—It gives relief in enuresis, involuntary micturition and defecation; the second or third dilution rarely fails. It is used antipathically as a local application to spasmodic strictures; rigidity of the os-uteri in parturition or dysmenorrhœa; stricture of the urethra, retention of urine, chordee, &c.

Sympathetic.—It is used to contract the arteries in some inflammations when it can be made to operate through the vaso-motor nerves. Mammary abscess may be prevented by the local application of Bell. to the inflamed breast. But in substance it may increase the pain as it does that of a boil.

Belladonna, succeeded by *Pulsatilla*, may be given in idiopathic tetanus which has arisen from deranged menstruation, or other causes

connected with the utero-genital system, and where the extremities are for the most part affected with the morbid contractions. It may also be sometimes given in the last stages of traumatic tetanus, when there is delirium, dilated pupils, and great mental anguish.

Arnica should be used both internally and externally, in all injuries which threaten to tend to tetanus. This remedy possesses the power of warding it off, when it might otherwise have occurred without its use, and should always be resorted to when danger is anticipated from a wound.

Trismus following an Injury; Ignatia.—The patient begins to manifest trismus or lock-jaw, by stretching of the limbs, complaining of much pain in the neck, or of stiffness in the neck or the back; he soon has cramp or pain resembling the joints of the jaw; in the cheeks near the ear; he has constant inclination to yawn, but is unable to open his mouth sufficiently; he is fretful, irritable, difficult to please, grows worse when he is touched and handled. Give it every two hours.

Mercurius.—After Ignatia has been tried, and the lock-jaw has commenced; the back is stiff and rigid.

Belladonna.—When the face is red, and the rigidity great.

Aconite.—The patient grows red and pale alternately.

Bryonia, or Veratrum.—Where the patient becomes cold.

Secale.—When warmth makes him worse.

Hypericum.—When the original injury is affective.

Ruta.—A redness first appears round the wound.

Chloroform.—*Case by Dr. Dick, of Buenos Ayres*.—A mulatto sailor, aged thirty-two, admitted to the British Hospital with two slightly incised wounds, one on the scalp, the other on the hand, inflicted five days before. Two days after admission, symptoms aggravated; frequent spasmoid attacks amounting to opisthotonus (backward); the least touch or breath of air excited the paroxysm; profuse perspiration. Chloroform, ten drops every twenty minutes, administered through the vacancy left by a missing tooth. The paroxysm soon ceased, but tenseness and rigidity of the cervical and abdominal muscles continued. Next day pressure on the abdomen did not excite the paroxysm, though it had done so before. Chloroform, thirty drops every half hour. Next day no paroxysm, muscles hard and unyielding. Chloroform continued for several days. There was no paroxysm till the twelfth day of treatment. The Chloroform had been omitted by mistake, and he had a very severe attack of eclampsia. Neglect was guarded against and there was no return. Fourteenth day, slept for the first time since the beginning of the disease. The bowels (which Croton Oil had failed to regulate before) now began to act naturally; and from this time the symptoms began to be mitigated. He had less difficulty in swallowing; cervical and masticatory muscles became slightly moveable. On

the twenty-third day the pulse was feeble, and he desired animal food, The Chloroform thirty drops every two hours till midnight. Thirtieth day, muscular movements free and almost natural, save occasionally a convulsive twitch in the wounded arm. Speech not quite natural. He remained feeble but otherwise in good health.

TETANUS CHRONIC.—*Case by Dr. J. H. Payne.**—Mr. C. H., aged twenty-six, dark complexion, intelligent and temperate, had haemorrhage from the lungs at seventeen, supposed to have been caused by a fall two months before; but for near two years preceding he had chronic eruptions (scabies); itching and burning, especially at night. From a few small pimples it increased and covered the whole body. This eruption was entirely suppressed by treatment—supposed to be cured by a mercurial ointment. After this suppression, cough and haemorrhage continued from seventeen to near nineteen years of age. He then began to have cramps in his hands and feet. In Jan. 1847, Jan. 20, cramps more severe; the head drawn forward, then backward, the muscles rigid and inflexible, face livid, with frightful contortions and great distress. The attacks would last from a few days to six months, then leave him after having the severest ones; after an interval of uncertain length they would return as bad as ever.

In 1849 he had cholera; this relieved the spasms for four months. They then returned with new vigor. In 1852 the joints were dislocated; first the lower jaw, then the shoulders, lastly the hips, then all three would be dislocated in a spasm. He tried the treatment of the best hospitals in Boston, Rio, New-Orleans, San Francisco, was given up as incurable. Rigid diet, traveling, sea voyages, mineral waters, hot and cold baths, turpentine in large doses, issues, setons, blisters, bleedings, enemas of tobacco, and narcotics of all kinds were fully tested, without benefit. His physicians often gave him five ounces of laudanum in one hour in advance of the cramps, with but little effect. Six ounces of chloroform administered in an hour and a half rather made the spasms worse. In 1855, April 27, he came under the care of Dr. Payne. The patient would then be seized with the spasms without warning; face and knees drawn together in an instant with great force (emprosthotonus.) All the flexor muscles of hands, feet and body contracted, inflexible, rigid, whole person presented the form of a large ball. Spasms of the intercostal muscles, diaphragm and abdomen so intense that they produced a large cavity at the base of the horax, apparently displacing all the internal organs of the body; face suffused by a dark livid flush, and miserably disfigured by the perverted action of the muscles. After the distortion continued from two to twenty minutes, in an instant his condition was reversed. The head

* Amer. Hom. Rev. Vol. 2, p. 278, &c.

thrown backward, striking his feet with violence. The feet would piss the head nearly a foot, which curved the body in the shape of a hoop or ring. This curvation was so sudden and so forcible, that he would be thrown far from the bed, if not held by assistants. All the extensor muscles of the body were rigidly contracted and inflexible, at the same time in a continued spasmodic twitching motion.

"During these severe contortions, both shoulders, the lower jaw, and sometimes one of the hip-joints would be dislocated, requiring each time much strength to reduce them. The head was drawn back, the larynx forward, the tongue dragged down the throat, or convulsively protruded, nearly causing suffocation. The blood at times gushing from the mouth and nostrils in large quantities; the eyeballs spasmodically rolling, producing a frightful distortion of the face, expressing the greatest agony." In the course of twenty-four hours "both shoulder-joints and the lower jaw were dislocated twenty-seven times, and one or the other of the hips five times, requiring to be reduced each time causing distinct snaps when the bones returned into their sockets. And when the head was raised from the nuchæ, a distinct snap could be heard in any part of the room; during the severest spasms he was always delirious, or unconscious, the pulse not perceptible, and respiration nearly ceased, having the appearance of a person in a fit of epilepsy. The spasms left him greatly prostrated, his limbs and flesh sore as if badly bruised; sometimes heavy sleep followed. He was greatly reduced in flesh and strength; the face of a yellowish sickly look, the eyes deeply sunken in the head; tongue coated yellowish brown; no appetite, continued thirst; constipation; stool only once in nine or ten days; evacuations small, dry and dark colored; urine scanty, without sediment, brown-red color, voided with burning pain. He was melancholy, morose, depressed; easily enraged; nothing pleased him; despaired of being cured; confusion, drawings, shootings in the whole head.

This case was treated by Dr. Payne first with Stramonium, thirtieth, April, 27, 1855, at intervals, for eighteen days. During the action of the Stramonium there was a change in the symptoms: "The pains became more acute, the spasms drew him differently, and he *felt differently* from what he had ever done before. The spasms were postponed to a later hour, they did not last so long, and the time between them was shorter. The symptoms having assumed the form of epilepsy, with violent congestion, face more livid and purple than ever before, foam at the mouth, and a heavy sleep after the spasms, Bell. sixty-fifth was given in alternation with Saccharum-lactis for four weeks, or till June 15. There was then improvement in all the symptoms; fewer spasms, less severe; joints not so often dislocated, and he had passed several nights without any spasms. The congestion decidedly better

On learning fully the history of the case, it was considered that the *psoric* affection was the cause of all the trouble, and now (June 20th, 1855,) Sulphur 100° was given, two tea-spoonfuls from a solution every eight hours for five doses, Sac.-lactis for a week, and repeat the Sulphur as before. Continued this for six weeks longer. Then gave Sulphur, 200°, in the same manner. Under the use of Sulphur he improved rapidly. The spasms gradually decreased in frequency, remaining absent one, two, three, or more days at a time. After Nov. 1st, he had no severe spasm. After a few weeks a large number of small, dark, livid abscesses appeared on the face, and then on different parts of the body. These were a long time in suppurating; some were as large as a quarter of a dollar, and left without discharging. Some continued for six months.

2. HYDROPHOBIA.

“ So bends tormented Tantalus to drink,
While from his lips the refluuent waters shrink.
Again the rising stream his bosom laves
And thirst consumes him 'mid circumfluent waves.”

The name hydrophobia, or dread of water, is given to that dreadful malady which follows the bite of a rabid animal, and the introduction of its saliva into the blood. A dread of water is commonly a prominent and characteristic symptom of the disease; but it is by no means one that is invariably present. Cases are reported by Hunter, Frank, and Eberle, in which no unpleasant consequences followed the use of drinks, from the commencement to the fatal termination of the disorder. We ourselves have seen a rabid dog, that would, without hesitation, plunge into the water and drink during the whole course of the disease, without exciting spasmodic contractions, or any other disagreeable symptom.

Rabies originates spontaneously in animals of the canine species, like the dog, the fox, the wolf, &c., and appears to consist of a morbid deterioration of the saliva. The precise nature of this deterioration, or of the specific poison which this fluid contains, is at present entirely unknown; but in regard to its specific action upon some portion of the nervous centres there remains no doubt, although pathological anatomists have hitherto failed to detect the peculiar diseased appearances to which it gives rise. Perhaps this may be accounted for when we call to mind the proneness of pathologists to regard congestion of the blood-vessels, redness, effusion, softening or induration as the only morbid appearances indicative of previous disease, while, in point of fact, as shown by the pathological investigations of Dr. Hugh Bennett, by means of the microscope, “important changes may take place in the

cerebral substance, spinal marrow, &c., inappreciable to the naked eye, but clearly discernible with the microscope. (*Ed. Med. and Surg. Jour.*, Vol. LVIII., p. 58 and 60.)

The redness of the fauces and oesophagus which is often observed in men and animals dead of hydrophobia, is attributable rather to the irritation consequent upon the intense and unindulged thirst which was present during the attack, than to any specific action of the virus upon those parts. The virus of rabies is formed and is active, for the most part in the saliva, but a sufficient quantity is absorbed into the general circulation to produce the morbid impression upon the spinal marrow which constitutes the chief fact of the disease. Could we confine the virus to the saliva of the mouth, and prevent its admission into the circulation, no evil effects would result; but place the smallest quantity in a position where absorption can take place, and it will be conveyed with unerring certainty to the part which possesses a specific affinity for it, and there produce its legitimate morbid impression.

Some writers suppose that the poison does not enter the general circulation, because the North American Indians, the inhabitants of the country of Mantua, &c., eat the flesh of hydrophobic animals with impunity; but this proves nothing, for the lacteals and absorbents of the digestive apparatus, reject this substance as an irritant, and it is carried off with the faeces, without producing any impression.

Mackintosh supposed that many cases of tetanus were mistaken for hydrophobia, when dread of liquids is one of the symptoms of the former; and when we reflect that the teeth of dogs usually inflict such punctured or lacerated wounds as often give rise to tetanus, the opinion seems plausible.

Hydrophobia usually makes its appearance in from twenty to sixty days after the bite, although well-authenticated cases are recorded in which the virus has remained dormant in the system for years, when it has finally developed itself from some constitutional disturbance, and the patient has succumbed with all the symptoms of hydrophobia.

Diagnosis.—At an uncertain period, varying from three to nine weeks from the reception of the wound, the first symptoms of hydrophobia make their appearance, usually in the bitten part, which presents a livid and slightly swollen appearance, and attended with burning heat or shooting pains, which dart from the seat of injury to the neighboring parts. These symptoms are speedily succeeded by rigors, lassitude, great depression of spirits, anxiety, watchfulness, irritability, giddiness, eyes red, brilliant and sensitive to the light, uneasy sensations at the stomach, tension at the chest, difficulty of deglutition, and slightly oppressed respiration. As the disease advances, the cramps about the throat, neck, and chest, become more violent, until the mere sight of a liquid, or of a shining substance, will

produce the most painful paroxysms; there is a viscid saliva constantly secreted, which compels the victim to be continually spitting, while at the same time he is tormented with a dryness in the mouth and throat, and an intense thirst which he is unable to allay, on account of the spasmodic contractions which occur whenever drinks are presented to him. The skin is hot and dry, the cicatrix opens and presents an unhealthy appearance, the respiration becomes more and more difficult, the voice becomes changed, the pulse nearly natural, the body affected with tremors or slight spasmodic twitchings, vague pains extend up from the lower part of the spine to the head, and finally the countenance becomes pale and haggard, the eyes sunken, yet still brilliant; there are palpitation of the heart, wandering delirium, constant inclination to bite, extreme anxiety and uneasiness, sinking of the pulse, loss of voice, clammy sweat, and finally the sufferer sinks into a lethargy, or into convulsions and dies.

The disease commonly terminates in from two to eight days from its approach. Dr. Thatcher gives the following theory of hydrophobia. "The poison being infused into the contexture of the living solids, acts primarily as a local poison: the whole nervous system partaking of the irritation, is brought into general sympathy, even the functions of the stomach, brain, heart, and lungs suffer directly by its influence, and by a continuance of the morbid action, the structure of the living fabric is destroyed, or the principle which is essential to its natural action becomes dissipated, and the entire extinction of the vital principle is ultimately completed."*

The recent researches of Claude Bernard furnish the following results: It would appear that in several diseases the noxious substances causing disease prevail throughout the economy; in other cases it is found only in certain fluids. The virus that occasions hydrophobia resides only in the animal's saliva. We have not yet learned whether any one of the salivary glands is its peculiar seat, or whether it is indifferently secreted by all of them. No experiments have been tried on this point. "But it has been experimentally proved that the peculiar venomous principle does not exist in the blood; transfusion does not convey the poison from a mad dog to a healthy one."

It is a singular fact, and one which preëminently deserves our attention, that in so general a disease, the virus, which alone is capable of transmitting the affection, should be exclusively localized within one single apparatus, without existing in the blood at large. But the same thing, in principle may be seen in other cases; pepsine, ptyaline, and the active principle of the pancreatic juice are each secreted by a

* On Hydrophobia, p. 108.

special gland, and the venom of the serpent, which does not exist in the blood, is produced by a special apparatus. The virus secreted by the salivary glands of the mad-dog, is secreted by this apparatus alone, for the same reason. In glanders and some other diseases the poison is in the blood.

Treatment.—The most certain preventive means after the bite of a rabid animal, is to excise immediately and thoroughly the wounded part. This severe measure can only prove available unless resorted to within a very short period—say fifteen or twenty minutes after the infliction of the bite. If a longer time than this has elapsed, we should advise free incisions upon the wounded points, and after they have bled freely, and been suitably washed and cleansed, the application of the caustic alkali. Some surgeons speak in slight terms of the red-hot iron, of the butter of antimony, of Corrosive Sublimate, of Chloride of Zinc, &c.; and, certainly, the prompt use of the knife, and of the Caustic Potash, will prove more efficient and less painful than the other applications. A New-York physician writes as follows: I had occasion, a few years ago, to test the practical operation of these severe measures upon my own person. In July, 1844, I was bitten in the leg, without provocation, by a dog, which came tearing past me at a furious rate, with fierce and brilliant expression of the eyes, tail pendant between the legs, foam at the mouth, and hair standing erect upon the back. Without any delay, I excised the bitten part, and applied Caustic Potash to the wound in the most thorough manner; after which I dressed and bound up the limb, congratulating myself on my promptness and probable escape from the most dreadful malady. Inquiries were now instituted to ascertain something respecting the whereabouts of the “mad-dog,” when, to my surprise, and indeed, I may say indignation, I was informed that the animal was not rabid, but “dreadful ugly.” The course adopted, however, was a prudent and safe one, and I should most certainly do the same thing under similar circumstances, on the principle that “an ounce of prevention is better than a pound of cure.” As the matter actually turned out, I was tormented with a painful limb for two or three months unnecessarily; but had the animal proved to have been rabid, then the result would have been the saving of my life.”

No specific has yet been discovered for the cure of hydrophobia, although many articles have been at different periods brought into notice by the old school; as, for example: *Mercury, Burnt Lichen, Black Pepper, the Purple-flowered Anagallis, Oil of Valerian, Opium, Musk, Ignatia, Camphor, Cantharides, Stramonium, Nux-vomica, and Belladonna.*

Belladonna.—Professor Münch has given this article to several who have been bitten by rabid dogs, and not one was attacked with

rabies. Hahnemann also administered it with success, both as a prophylactic and curative remedy.

In consulting the pathogenesis of *Belladonna*, we find amongst the most prominent symptoms to which it gives rise, dryness and constriction of the mouth and fauces, accumulation of a tough mucus about the mouth, deglutition difficult or even impossible, injected and glassy eyes, articulation difficult, voice changed, giddiness, trembling and weakness of the whole body; mouth and jaws spasmodically affected, intense thirst, nausea, and finally, previous to death, "a feeble pulse, cold extremities, subsultus tendinum, tremors, deep coma or delirium, and sometimes convulsions.

From the above description, it is apparent that this medicine induces a close correspondence to the most marked symptoms of hydrophobia, and, therefore, it is entitled to our earnest consideration, when called to cases of this description. Hahnemann says of it:

Belladonna—"Among the symptoms produced by *Belladonna*, when administered to a person of sound health, are, those which, taken collectively, present an image greatly resembling that species of hydrophobia caused by the bite of a mad dog, a disease which Mayerne, Münch, Bucholz, and Neimihe cured in a perfect manner with this plant, homœopathically. *The patient in vain endeavors to sleep, the respiration is embarrassed, he is consumed by a burning thirst, attended with anxiety; the moment any liquids are presented to him he rejects them with violence; his countenance becomes red, his eyes fixed and sparkling,* (as observed by F. C. Grimm); *he experiences a feeling of suffocation while drinking,* (Camerarius and Sauter); for the most part he is incapable of swallowing anything, (as affirmed by various authors.) *He is alternately actuated by terror and a desire to bite those about him,* (as seen by Sauter, Dumoulin, Buchare, and Madorf); *he spits everywhere around him; endeavors to make his escape, and there is continual moving about of the body,* as has been observed by various other authors."

Dr. Richard Hughes thus speaks of the *tissue-irritant power* of *Belladonna* on the brain: "Belladonna first excites the cerebrum and perverts its functions; hence delirium, insomnia, mania. Its prolonged use produces congestion, inflammation, and effusion. For the cure of such conditions it is one of the best known remedies.

"On the cerebellum it acts by producing loss of the co-ordinating and balancing power in the muscular system, especially in the lower limbs." See remarks on this remedy under Chorea.

On the Medulla Oblongata.—*Belladonna* has produced spasms of the larynx and pharynx, difficult articulation and deglutition and spasmodic cough. An excited state of the medulla oblongata may give rise to many diseases. If its influence fall on the blood-vessels of

the brain, we have epilepsy. In this disease Belladonna is, after Hydrocyanic-acid, comparatively our best remedy,* and it is Dr Brown-Séquard's chief remedy at the hospital for the paralyzed and epileptic. If the laryngeal and pharyngeal nerves be mostly affected, we have laryngismus, pertussis, or hydrophobia (so far as the throat symptoms are the principal ones.) In laryngismus stridulus Bell. has not been tried, and Aconite rarely fails to arrest it. In pertussis, Bell. has been in use by both schools. In alternation with Drosera it is the best remedy in the second stage of the disease.

If hydrophobia was ever cured the credit is due to Bell. (*Watson, Practice, &c.*, Vol. I., p. 629.) In China, Stramonium is regarded as a sovereign remedy for it. In some cases of stammering it may be useful, by acting on the hypo-glossal or motor nerve of the tongue. Lastly, when the excited state of the medulla falls most severely on the pulmonary branches of the vagus, we may have spasmodic asthma, for which Stramonium is a remedy in the old school. In all of these cases, Bell., if useful at all, acts by producing a degree of irritation on the medulla oblongata.

On the Corpora Quadrigemina.—These organs—the centres of vision—when irritated by Bell., manifest its effect in the visual hallucinations which are common in Bell. poisoning, even when the retina is paralyzed to all actual objects. Hence the use of Bell. in delirium tremens, and other derangements of vision from causes within the cranium.

Case.—Bell.—An instance is given in *Hufeland's Journal*, in which a rabid man bit several others, all of whom died from rabies except two, who were treated with Belladonna. Dr. Casanova says he has treated several cases with this remedy, without excision or cauterization of the bitten part, and has succeeded in restoring them all to health except one, who had been barbarously treated with knife and fire. As a prophylactic, he gave one dose a week for a period of forty days after the bite is inflicted. The period of incubation has in many cases been much longer than this. Hartmann says, even "for years."†

Rabies—Intermittent—quotidian form. Dr. Casanova gives a case of a girl, age fifteen, of delicate constitution, with incipient tuberculosis, who was bitten on the arm by a girl nine years old. The wound was inflicted on the middle and posterior part of the right fore-arm, penetrated only the epidermis, and only a few drops of blood flowed. Next morning erysipelatous inflammation extended from the wound toward the shoulder, but this was cured by a few doses of Belladonna; the wound healed in four or five days. Forty-one days after the injury,

* See cases by Dr. Russell, *Brit. Jour. Hom.* Vol. 15.

† *Therap. Hom.*, Chap. XIII.

the phenomena of rabies appeared in a frightful form. In the midst of a paroxysm that had lasted four hours, ending at three, p. m., she was found "lying in bed on the right side, face covered with both hands and a handkerchief; refused to answer questions, though conscious; sobbing profoundly, with catching the breath; breath cold; sobbing quick, convulsive, audible to the street. Hurried respiration, feeling of suffocation in the throat; discharge of thick mucus from the mouth; general convulsions at short intervals; pulse and heart rapid, intermittent, impossible to reckon the strokes; pain all along the spine; headache; eyes with peculiar unsteady glistening appearance and intolerance of light; buzzing in the ears; tongue dry, cold, whitish; no appetite; no aversion to water; wished some every few minutes; cold extremities; very anxious, restless, and timid; no bells allowed to ring in the house; sudden starting, excited by the slightest noise; dread of persons entering the room. After three hours these symptoms all subsided; she rested quietly till eleven o'clock next day. A paroxysm then commenced by slow tremor all over the body; hurried respiration, gradually increased till general convulsions were manifest in the same degree of intensity as on the previous day; the attack lasted two hours. Cedron 1° was given after the paroxysm, and repeated at seven next morning."

The paroxysm returned earlier next morning, and was repeated with increased severity at four, p. m., and was attributed to "the active forces of the drug." Cedron 3°, and then the 10° was tried, "which also proved aggravating." The double paroxysm returned on the two following days. Tartar-emetic was given in the apyrexia to remove the mucous râles and rattling phlegm, which threatened suffocation. Cedron 30° then checked the paroxysm, promptly and permanently. There was no return. In cases where "*periodicity*" is a prominent feature, Cedron may with propriety be employed in preference to Belladonna.

Lobelia is said to have power to counteract the poison of hydrophobia. It is directed to give a dose at the appearance of the first symptom of the disease. This is to be repeated "dose after dose, till the system is completely prostrated and the patient is utterly unable to lift a hand." Whether this powerful agent shall yet prove itself a specific antidote for the most dreadful of all animal poisons, remains to be seen.

When the disease is fully formed, and there are severe convulsions, with sense of impending suffocation, dryness of the mouth and fauces, extreme difficulty of deglutition, dread or horror even at the sight of liquids, delirium, rage, and fury, we may likewise consult *Stramonium*, *Nux-vomica*, *Hyoscyamus*, *Lachesis*, *Cantharides*, and *Veratrum*.

to be mixed intimately; the ounce of calcined jaw-bone of a dog answered as forming the Verdigris into a good first trituration of the latter and increased its efficacy and safety. An adult took a tea-spoonful a day. Half of the above quantity was to be used for a child, to be taken in a small quantity of water. Next morning, before eating, to repeat the same. This, if taken after the bite and before the symptoms appear, will prevent it. But if the symptoms appear: "a physician must be called, who must give 180 grains of the above mixture, the bulk being more than doubled by another addition of animal substance, and half an ounce of Calomel at one dose; no fear being entertained of the large dose of poisons, as the poison of the disease was sufficient to neutralize it. In three hours, if not completely relieved, to take four grains of solid Opium. He must be careful to avoid the use of milk for several days after taking the above." To the success of this prescription, as the only one he used in the course of his more than twenty years' successful practice, Mr. Crouse made an affidavit before Chief Justice Kent, at Albany, March 24th, 1806; and for the disclosure of his method the State paid him \$1,000.

Dr. David Hosack wrote of it, that he would be inclined to try it all except the Calomel. The chief ingredient being copper, which the books show to have great power in epilepsy, and other diseases of the nervous system. He had learned from Governor Lewis that the testimony in favor of Crouse's remedy was very respectable. He thought the power of one poison might be expended in counteracting the other. "Let us not despair of finding some stimulus that will counteract hydrophobia."* Of Verdigris, the old authors say: "Large portions of four or five drachms, or more, have been swallowed with no other inconvenience than the present vomiting; yet, in smaller quantities, besides the vomiting, it excites pain in the stomach, griping in the bowels, tenesmus, ulcerations, bloody stools, difficult breathing and contractions of the limbs, which often terminate in death.† Copper, swallowed in its pure state, is inoffensive."‡

Scutellaria Laterifolia.—*Skull-Cap*.—Flowers late in August, stem square, root perennial; flower violet, small, in racemes; intermixed with small leaves. The species *galericulata* has axillary flowers, in pairs, and large corolla. A Mr. Lewis long practiced in Westchester County, New-York, in the treatment of hydrophobia with this plant. He gave a single powder at a dose, and tested its powers by giving it to some animals bitten, and leaving others bitten by the same dog to die. He said two ounces of the plant given in several portions would cure man or beast. It was claimed that more than one hundred cases were cured by the Lewis family. Dr. Vandever, of Raritan, N.J., said

* Medical and Philosophical Register, Vol. I.

† Parr's London Med. Dictionary. ‡ Thatcher on Hydrophobia, p 214.

he had cured more than three hundred, and lost but one. Cases of cures were published in the N.-Y. Evening Post, May, 23d, 1811 other cases, Dec 21st. (*Thatcher*, p. 229.)

The Mad Stone.—The belief in the absorptive power of certain kinds of stone to extract poison is still common. Dr. Mease examines their claims in the Medical Museum (Vol. V.), and denies their having any virtue whatever. In India the people still believe in them. In Tonquin, persons bitten by serpents press out the blood and apply a small stone, called a serpent stone, which is said to draw out the poison. When full it drops off; is washed in lime water and reapplied. Dr. Mease says some of these stones are in the cabinet of the Philosophical Society, brought from India. They are more than an inch long, ten lines broad, of a bluish-slaty color, and flattish shape. A gentleman in Virginia offered to sell one for two thousand dollars in shares of ten dollars each; the amount was made up in five counties, and a meeting of the stockholders placed it in the hands of a physician for safe-keeping.

3. ANGINA PECTORIS.—STERNALGIA.

This disease was fully described by Heberden, in the Medical Transactions of the London College of Physicians (Vols. II. and III.,) though it is mentioned under other names by a great number of ancient authors. It appears in several different forms, being sometimes preceded by derangement of the digestive organs, and sometimes without any, or very slight premonition.

I. *Acute Angina Pectoris.*—Sudden seizure with painful constriction of the chest, which is most severe in the cardiac region, near the lower part and left side of the sternum. The pain sometimes extends to the right side of the chest, then to the shoulder, arm, wrists, and sometimes the fingers. In mild cases the pain may be of short duration.

In more severe cases, the patient experiences occasional sharp pains in the region of the heart, especially after active exercise, or when putting the muscles of the chest upon the stretch. After a time, the pains recur more frequently, continue for a longer period, and are accompanied by palpitation; attacks of syncope; sense of suffocation and tightness in the chest, and great difficulty of breathing. The attacks are usually excited by violent physical exertions, mental emotions and deranged stomach, from abuse of stimulants, and of indigestible food.

In more violent attacks, the pain and the sense of constriction of the chest and pain in the arm involves both sides of the chest and both arms; and the agony is so excruciating that it is compared by Laennec

to the piercing of nails, or the laceration of the claws of animals : there is a sense of syncope, with suffocation, orthopnoea, convulsive dyspnoea, palpitations, extreme anxiety, and a sense of approaching death. The stomach is affected with flatulent distension and great irritation, relieved by eructations. The pulse is sometimes weak, irregular, intermittent, or full, active and strong. When the attack has been excited by exercise, the patient suddenly stops, and feels that life would be terminated by any effort to proceed. The paroxysm varies in duration as well as in severity, lasting sometimes a half hour, and very often several hours. It may at first be slight in degree, and the paroxysms may occur at long intervals. They afterwards occur more frequently and from slighter causes. In very severe cases there are almost constant dyspnoea, pains extending down the arms and into the back; very frequent and alarming attacks of syncope and suffocation; pale and haggard, or livid and exceedingly anxious expression of countenance. If the disease is not arrested, the patient generally expires suddenly in one of those distressing paroxysms.

When *angina pectoris* proceeds from *hypertrophy* of the heart, we shall observe, in addition to the symptoms just named, powerful pulsations of the heart, which are visible at a distance; full and vibrating pulse, and dull sound on percussion.

If the disorder has arisen from *dilatation of the ventricles*, there will be swelling and visible pulsation of the jugular veins, a loud and distinct sound on applying the ear over the fifth and sixth ribs, vertigo, frequent turns of syncope, palpitation and dyspnoea; pulse weak and tremulous.

When *angina pectoris* is connected with disease of the *valves* of the heart, the following signs will be present: great dyspnoea on the slightest exertion; frequent and violent palpitation; pulse feeble and irregular; livid and unnatural appearance of the countenance; oedematous swelling of the feet and ankles; and "a permanent sawing or rasping, or filing sound over the valves of the heart, especially after depletion and rest." (Swett.)

II. *Chronic Angina Pectoris*.—The paroxysms recur frequently, from trifling causes; they begin during sleep, are of long duration, though less violent; sometimes it lasts several days; palpitation of the heart; irregularity of the pulse may continue through the intervals as well as in the paroxysm. The disease may commence without warning, with a feeling of intense agony and approaching dissolution, palpitations, irregularity of pulse; the pain sometimes involves both arms, and ascends to the throat and lower jaw. It is aggravated by the slightest movement, assuming the erect posture, reading aloud, coughing or sneezing. A neuralgic pain continues under the sternum, extending to the arms after the more distressing feelings have sub-

sided, (*Copland. Dict.*, Vol. I., p. 71, &c.) During the paroxysm consciousness is generally retained; but the face and extremities are cold, covered with cold sweat, and the features spasmodically distorted.

The effects of the paroxysms when they occur at long intervals are not generally serious so long as the general health remains good. But when the attacks become frequent, are severe or protracted in duration, the digestive organs become disordered; the stomach becomes irritable, the bowels irregular, the respiration impeded, countenance anxious; the integuments become flabby; the circulation deranged; the face and other parts of the body become oedematous and dropsical. The patient often sinks under a complication of organic derangements, or dies suddenly from the violence of a paroxysm. "In nearly all cases the attack is preceded or attended by more or less derangement of the alimentary canal, manifested by flatulence, sour eructations; cramps and costiveness;" and "the pain goes off reversely" from the order in which "it comes on, subsiding first at the extreme point, and the paroxysm closes with belchings, &c." (*Amer. Cyclop. Pract. Med. and Surg.*, Vol. I., p. 556). Phila., 1834.

DIAGNOSIS.—Distinguished from asthma by the acute and peculiar pain in the sternum and left arm, by the difference between the phenomena attending on each; the paroxysms of asthma come on at evening or during the night; they are characterized by heavy dyspnœa, wheezing, and cough, relieved by expectoration and exposure to fresh air, and subside towards morning. The dyspnœa of asthma depends on the spasmodic contraction of the muscular fibres and their ramifications. The stethoscope gives no peculiar signs of angina pectoris except when it is complicated with organic lesion of the heart and lungs, or effusion in the plural or pericardial cavities. The neuralgic character of the pain in this disease and its severity form the most striking features to distinguish it from other diseases.

CAUSES.—1. *Predisposing.* More common in males than females; in middle aged persons, or those still older; in persons of gouty or rheumatic diathesis, of indolent, studious, or sedentary habits, of anxious minds, indulging in a full diet and stimulating drinks. Chapman refers its origin very generally to hereditary causes, especially to transmitted gout. (*Amer. Jour. Med. Sci.*, Vol. XIII., p. 67.). It evidently arises from various other causes.

2. *Exciting Causes.*—Active exercise, walking against the wind, up hill, or ascending the stairs, with the stomach distended. We have seen a case in which it was brought on by the labor of digging up large fruit trees. The patient was a farmer of sixty years of age, and recovered. In a severer case, excited by exposure to extremes of heat and cold, nearly every symptom above enumerated was present. The patient ultimately died of organic disease of the heart. In some sus-

ceptible and irritable constitutions, this disease may be excited by the most trifling causes: as eating too much, strong emotions, talking, yawning, sneezing, or any other sudden exertion.

Angina pectoris may proceed from some organic disease connected with the heart, like ossification of the coronary arteries, or of the valves of the heart, dilatations or hypertrophy of the heart, obstructed circulation from an accumulation of fat about the organ, from the pressure of the tumors, or from asthma. Very often, however, it is a purely sympathetic affection, and entirely disconnected with any structural disorder of the heart or its appendages. In these instances the nerves which supply the heart are affected in such a manner that slight exciting causes, as errors in diet, mental emotions, or ascending a flight of stairs, induce the paroxysms.

PATHOLOGY.—In some cases no pathological change is discoverable after death; and lesions found in others have presented the greatest diversity of appearance. Of forty-five fatal cases, says Dr. Forbes, of London, thirty-nine exhibited organic disease of the heart or great vessels. The most common changes observed are: ossification of the coronary arteries; ossification of the valves of the heart or of the arterial trunks; enlargement of some of the cavities of the heart, with increased or diminished thickness of their parietes; softening, paleness and tenuity of the muscular structure; deposition of adipose matter to the extent of impeding the heart's action; effusions of serum or blood into the pericardium or pleura; in many cases the traces of disease found on dissection, are remote from the part which was the principal seat of suffering. The symptoms of this disease clearly show that none of these pathological states can be essential to its production, though some of them are often found to attend it. Chapman and many late writers, regard the real nature of the disease as spasmodic; and it is considered a "species of neuralgia, generally commencing in the pneumogastric nerve and spreading in different directions as other nerves become involved." Chapman refers the origin of the disease to an irregular or misplaced gout, and adduces the particulars of six cases in which recovery took place from the use of measures which developed real gout in the extremities. It is not true, however, that *angina pectoris* partakes always of the nature of *gout*, though its *neuralgic* character is unquestionable. Copland says four-fifths of all the recorded cases of which dissections have been recorded exhibited disease of the heart or large vessels. "But whether these lesions were rather the consequence than the cause of the disease, may be disputed." Dr. Lee considers the disease as a pure neuralgia, though it may not be seated exclusively in the cardiac plexus. "Its true seat would rather seem to be the sensory portion of the spinal cord, opposite the lower cervical or upper dorsal vertebra and respiratory ganglia." (*Note to*

Copland, Vol. I., p. 75.) Kneeland has shown more at length (*Amer. Jour. Med. Sci.*, Jan. 1850, p. 45-63,) that the seat of angina pectoris is "not in the circulating, the respiratory, or the digestive systems;" but that it is "an affection of the nerves supplying these systems;" and that its seat is "in the par vagum, or pneumogastric system of nerves, its branches, terminations and communications." These nerves may be affected by *neuralgia*, *rheumatism*, or *neuritis*.

PROGNOSIS.—Regarding angina pectoris as essentially a nervous or *dynamic* disease, and not necessarily dependent on organic lesions of the heart, we may hope to remedy it where the evidence of the existence of structural disease is not strong. Laennec says the disease "in a light or moderate degree is extremely common, and exists very often in persons who have neither an organic disease of the heart, nor of the great vessels." He has seen many who have had very violent attacks, but of short duration, who have recovered. (*Auscult*, tom. II., p. 747.) "If the disease be neuralgic," says Kneeland, "recovery may be complete without any organic change. If it be rheumatic, recovery might leave behind it a predisposition to cardiac disease." Even if one pneumogastric nerve be disorganized, restoration to a moderate degree of health is not impossible. When the case has become inveterate from neglect, or *organic* disease has been established; when it occurs in advanced age, or presents symptoms of effused fluid within the thorax or oedema of the extremities, a fatal termination may be anticipated sooner or later.

TREATMENT.—During the Paroxysm.—The patient should be placed in a state of tranquility, in a supine or reclining position. When the symptoms are urgent, the patient plethoric or vigorous, the pulse full and strong, nearly all authors have sanctioned the practice of prompt bleeding from the arm. (*Dr. Read, Dubl. Med. Trans.*, Vol. I., p. 105, also *Parry, Burns, &c.*) In more questionable cases, where the pulse is weak and countenance collapsed, all depletion must be avoided, and leeches can hardly ever be appropriate. *Dry* cupping between the shoulders is almost always safe, and often very effective, as it gives all the benefits of depletion without expending the vital fluid. In one case in which inflammatory rheumatism of the extremities was suddenly transferred to the heart and the parts supplied by the pneumogastric nerves, I succeeded in relieving the oppressed organs by applying large glasses to the cardiac region, and between the shoulders at the same time. in all cases of violent congestion of important organs, the most immediate relief may be given by cupping, which acts not only as a revulsive measure of great power, but as a counter-irritant, much more prompt and effectual than blisters. When a large glass is skilfully applied, the skin instantly rises a full inch-and-a-half

within it, and, in forty minutes or less, a blister of that depth, full of a thick, yellow serum is formed.

Internal stimulants, opiates and carminatives, are always given with some temporary benefit. *Camphor, Opium, Spirits of Nitre, Asa-fætida*, have been effectual in giving immediate relief; but this may be only temporary, and we must seek for more permanent results by the employment of remedies more clearly specific.

REMEDIES.—In the selection of remedies, strict regard should be had to the remote and exciting causes of each case. If the symptoms are the result of some organic affection of the heart, our prognosis must be, for the most part, unfavorable, and we can only reasonably expect to palliate the sufferings of the patient. But if the remote cause consists simply of a diseased condition of the *par vagum*, or of the cardiac nerves, which renders them liable to become morbidly excited from trivial causes, we may prescribe medicines with every prospect of ultimate success. The most reliable specifics in this malady, are, *Aconite, Digitalis, Hepar-sulphuris, Lachesis, Nux-vomica, Ignatia, Veratrum-alb., Arsen. Veratrum-viride, Sepia, Sambucus, Ipecacuanha, and Pulsatilla*. The attenuations should be selected with reference to the impressibility of the patient, and the medicine should be persisted in, at suitable intervals, during the continuance of the disease.

Arsenic.—E. Alexander directs Arsenic on the ground that Tachenius, Guilbert, Preussius, Thilenus and Pyl, have seen it give rise to very great oppression of the chest, Gresselius to a dyspnoea almost amounting to suffocation. And Majault, in particular, says it produces sudden attacks of asthma, excited by walking, attended with great depression of the vital powers. (*Hahnemann*.)

PALPITATION OF THE HEART.—(See Vol. I., p. 842.)

NERVOUS PULSATIONS OF THE AORTA.—*Predisposing Causes*.—A weak, emaciated, delicate frame; hysteria; accumulations of air in the colon or stomach; dyspepsia; morbid accumulations in the cæcum; aneurism of the aorta, celiac or superior mesenteric artery; disease of the pancreas, stomach, or mesentery; enlargement of the vena cava inferior enlargement of the heart, dilatation of its right side; adhesion of the pericardium to the heart.

The morbid pulsation is generally associated with nervous or hysterical symptoms, increased or diminished without evident cause; it is often connected with dyspepsia, deranged menstruation; is excited by strong mental agitation, by sinking paroxysms observed in delicate females. (*Copland*.) Dr. Hope referred the pulsation to an anæmic or watery condition of the blood; Laennec thought it was produced by nervous and hysterical irritability, with spasm of the aorta.

DIAGNOSIS.—By the stethoscope. “A smart and vigorous jerk” is felt, and a slight whizzing sound is heard, which is different from the

"gradual, steady, and strong impulse attending aneurism." (*Copland Hope, &c.*) Dr. Mott says: "if the pulsation in the epigastrium is strong, we may infer that it is not aneurismal, but produced by one of the other causes. The perfect correspondence between the pulsation of the epigastrium and the action of the heart, is a circumstance strongly diagnostic of the aneurismatic state of the aorta, cœliac, or superior mesenteric artery." (*On Pulsations in Epigastrio, Physico-Medical Transac.* New-York, 1817.)

In the paroxysms the common treatment is limited to mild stimulants. The predisposition to it is often promoted by the habitual use of strong coffee or tea; and they sometimes give speedy relief in the paroxysm. The Valerian, Ether, Assafœtida and Ammonia, give present amelioration; mental tranquility, proper diet, and due attention to the various secretions, and sedatives constitute the usual adjuvant measures.

To remove the tendency to return of these pulsations, the deranged functions of the different organs must be restored. This can only be done by judicious treatment directed to the removal of the diseases of which the pulsation of the aorta may be regarded as symptoms. The remedies most likely to effect this object, are *Acon.*, *Bell.*, *Camphor*, *Nux-v.*, *Ignatia*, *Lobelia*, *Digitalis*, *Laches.*, *Veratr-alb.*, *Veratr-virid.*.

AORTA, OSSIFICATION AND RUPTURE OF.—Case of Dr. B. F. Joslin, of New-York.—Having reached the age of sixty-five with general good health, he was affected in July, 1861, with a slight attack of paralysis, which soon passed off, but left a debility from which he never fully recovered. On the 22d December, when feeling unusually well, after a moderate dinner, he was attacked, while in the act of lying down, with a severe pain in the spine between the scapulae, prostration and cool perspiration. The prostration went off, but the pain continued; it prevented him from lying down, and seemed to induce him to move, as he walked up and down the room for four or five hours. Then walking up-stairs, he lay on the bed, or walked alternately, until 7 p. m., when the pain became so intense as to extort cries, and as they increased, apparently took away his breath; as respiration ceased, action of the heart stopped, he became bluish in color, and pulseless. Profuse cold sweat broke out generally; spasms drew the head to the right, eyes were fixed, and he seemed to be dying. He gradually recovered, but was much prostrated, and it was some time before his mind became clear. Next day the pain was moderate; on the 24th he had three paroxysms; the three days following he was more comfortable; 28th, a threatened paroxysm was prevented, next night restless, without pain. The evening of the 30th, comfortable, listened with interest to the reading of a state paper; looked out some symptoms of his own

case, and then slept soundly; at 1, A. M., became more restless, at half past five started up with dyspnoea, moaned as if in pain; breathing became more and more labored, and about 6, A. M., he ceased to breathe.

Post-mortem examination revealed extensive ossification of the aorta, and as the immediate cause of death, rupture of the aorta near its arch. (*Dr. Bowers' Address.*)

4. STRABISMUS.—SQUINTING.

This affection may be either acute or chronic.

1. Acute strabismus, which is symptomatic of disease of the brain
2. Chronic strabismus, (a.) divided into *essential* and *consecutive*, to eclampsia and chorea; (b.) organic shortening of the muscles of the eye, which may be congenital or consecutive to a traumatic lesion.

2. *Chronic strabismus.* (a) *essential strabismus.*

Remedies: Alumina, Belladonna, Hyoscyamus, Stramonium, Tabacum.

The symptoms we enumerate relate mainly to the eye, but the totality of the symptoms should be considered in each case.

Belladonna, for scrofulous patients.

Strabismus upwards (rectus superior muscle); or, outwards (rectus externus.) The left eye drawn upwards (rectus superior muscle,) whilst the right eye is drawn upwards and outwards (rectus externus and rectus superior.)

Exophthalmia (obliquus, major and minor.)

Convulsions of the eyelids, tending to separate them.

Pupils contracted, then dilated, and lastly, insensible to light.

Presbyopia (the four recti muscles?)

Scotopsia, diplopia; amblyopia, amaurosis, blindness; he sees objects variously.

Alumina.—Strabismus of both eyes (of which muscles?); convulsions of the eyelids; ptosis; paralysis of the upper eyelid; ophthalmia; blepharitis scrofulosa; lippitudo; frequent styes; photophobia; amblyopia; the patient sees objects yellow.

Hyoscyamus.—Strabismus inwards (rectus internus muscle); strabismus upwards (rectus superior muscle,) strabismus upwards and inwards (rectus internus and obliquus minor muscles.) Myopia (obliquus major and minor muscles;) triplopia; great congestion of the eyes, which are sparkling, haggard, bright, or dull and dim. Look stupid and dull.

Dr. Gallivardin gives the case of a child aged twelve years, of lymphatic temperament, a fair-haired blonde, who had strabismus for eight years. When two years old she had two convulsions, each lasting ten or twenty minutes. At four, when playing with a pitcher, she fell, and

it broke and cut her hand. After the fright the right eye was found to squint strongly inwards; half the pupil disappeared behind the nose. The rectus internus, habitually contracted, was sometimes tremulous with slight *dromic* motion.

Sulphur 30° was given thrice a day for one week. In a month there was no improvement. She then took Hyoscyamus 3° for eight days, three doses per day. It was then well. Some slight relapses afterwards occurred and were always promptly removed by Hyoscyamus 3°. Eight years after this treatment she continued well. The author says he tried this remedy in some other cases, but without success. (*Jour de la Soc. Gallicane.*)*

Cyclamen.—*Case by Dr. Eidherr, of Vienna.*—A child aged two months and a half, fell from the table to the floor without receiving apparent injury. A few days afterwards it was attacked with measles after recovering from which it was noticed that it squinted. Arnica failed to cure it. Cyclamen was directed for ten days. It became entirely well from this medicine.

Dr. Wurmb, of Vienna, also cured a coachman of strabismus by Cyclamen.

Stramonium.—Strabismus in every direction (elective action on all the motor muscles of the eye); fall of the upper eye-lid, apparently produced by a spasm of the orbicular muscle. Pupils contracted, dilated, and lastly, immovable, as if paralyzed; myopia, diplopia.

Visual hallucinations respecting the color and position of objects.

Tabacum.—Strabismus upwards (rectus superior muscle.) The eyes are deeply sunk in the orbits (all four recti.) Convulsions of one or the other eyelid, sometimes only of the orbicular muscle; pupils contracted, dilated, and at length insensible to the light; ocular and palpebral ophthalmia; hallucinations of the sight, photophobia; amblyopia, blindness sometimes only transient.

Phosphorus.—Dr. Tavignot gives two cases treated successfully with it. He says† he is usually successful in cases of paralysis of both the third and sixth pair of nerves, by giving Phosphorus internally, and applying it locally around the eye. He applies around the eye a liniment containing twenty centigrammes of Phosphorus, to one hundred grammes of Oleum-nucis, and twenty-five grainmes of Naphtha; and of an emulsion containing 0.10 centigrammes of Phosphorus to Oleum-amylgdalus-dulc. 10 grammes, Syrup ninety grammes, gum two grammes, he gives a tea-spoonful or two daily. He says he cured by this mode, in twenty-five days, a case of complete ptosis, strabismus externus, mydriasis, &c., in which electricity had been employed for two months without effect. Another case was that of a rich land pro-

* *Moniteur des Hopitaux.*

priector, who had spermorrhœa with paralysis of the right branch of the sixth pair of nerves. He was cured with Phosphorus of the paralysis in ten days. When about to send the patient elsewhere to be treated for the spermorrhœa, it was found that the Phosphorus had cured this also.

Other Remedies for Strabismus.—Digitalis.—Both eyes incline to turn to the left side; when turning them to the right side, they feel painful, and then he sees all things double; at the same time the face is bloated.

Camphor.—Spasms of the muscles. The balls of the eyes are turned upwards.

Veratrum-alb.—The eyes are distorted or protruding, or turned back that the whites cannot be seen.

Aconite.—Distortion of the eyes; the eye squints upwards.

Secale.—Frightful spasmotic contortion of the eyes, with contraction of the pupils, which are sometimes closed. Squinting.

Spigelia.—Involuntary motion of the eyes. Distortion of the eyes accompanying spasmotic affections from worms.

SPASMS OF THE EYELIDS.—*Ruta Graveolans.*—Spasms of the orbicularis muscle; spasms of the lower lid, the tarsal cartilage moves irregularly; followed by water running from the eyes.

When medicines fail to cure strabismus we must resort to: 1. Spectacles properly made. These have in place of glasses, plates of metal or pieces of card, with very small orifices in the centre of each plate, exactly in the axis of normal vision.

The use of spectacles *ad hoc* acts in a way analogous to the method of Ling's method of Swedish gymnastics. This system is founded on an exact knowledge of the anatomy of the muscles, and when properly understood, enables the practitioner to bring into action any given muscle, singly and in succession to any other one. (*Jour. Soc. Gallicane.*)

5. CHOREA.—ST. VITUS DANCE.

Chorea occurs, for the most part, in girls of feeble constitutions and of irritable nervous temperaments, and between the ages of five and fourteen. The disease is recognized by almost constant involuntary movements of the muscles affected, while in the waking state, either with or without derangement of the intellect. From its resemblance to raphania, it has sometimes been confounded with it. It also presents many marks of similarity to epilepsy and hysteria, and is probably somewhat analogous to these maladies in its location and nature. The affection is not usually attended with danger, and terminates at

the period of puberty; but when it has existed for a number of years accompanied by perversion of the intellectual faculties, permanent idiocy, or at least an impaired understanding may be feared. Finally, the disease may occasionally occur at any period of life, and in individuals of both sexes.

Diagnosis.—Generally for months previous to the occurrence of the involuntary motions which characterize this disease, it will be found that the child has suffered from constipation, oppression in the region of the stomach, and chest, vertigo, and other bad feelings in the head, appetite morbidly increased or depressed, occasional flushes of fever during the night, palpitation of the heart, nervousness, irritability and coldness of the feet. The involuntary motions commence by slight twitchings in the muscles of the face; which soon become strongly pronounced, and extend to a greater or less extent to other parts of the body, as one entire side, or one arm or leg. When the limbs are affected, the walk becomes awkward and unsteady, and the arms fail to obey the commands of the will, while involuntary gestures and motions are continually made without reason or point, thus causing the individual to present a most ludicrous appearance. The patient may remain in this condition for years, without the occurrence of any other serious consequences, unless the intellect becomes impaired, when a total loss of mind may result. Some cases are attended with difficult respiration, dysuria, vague pains in the limbs, confusion of ideas, and failure of memory.

Causes.—A naturally delicate constitution or one which has been impaired by the abuse of medicines, and a nervous temperament, are conditions most favorable to the production of chorea. Probably the most frequent exciting cause is the repercussion of some chronic cutaneous eruption. Many facts are on record which go to prove this; as for example, the cases cited by Hahnemann, Staph, Pouchet, Frank, &c., where the malady has arisen in consequence of sudden drying up of tetter, plica polonia, herpes, scald head, psora, or some habitual discharge. Other exciting causes are: the depressing passions, fear and terror, masturbation, irritation of the bowels from worms and fecal accumulations, cold, insufficient nutriment, and excessive loss of blood.

TREATMENT.—In all cases of chorea the patient should be removed to the country, where she may enjoy pure and salubrious air, abundant exercise, and a plain, but highly nutritious regimen.

The remedies for chorea are, *Stramonium*, *Belladonna*, *Cuprum acet.*, *Sulphur*, *Calcarea-carb.*, *Hyoscyamus*, *Rhus*, *Nux-vomica*, *Ignatia*, *Lycopodium*, *Phosphorus*, *China*, *Ferrum*.

If the disease has been caused by fright or terror, and we find great contortions of the face, eyes, and limbs, head thrown back, or drawn frequently to the left side, oppressed respiration, wild and staring ex-

pression, convulsive laughter or weeping, restlessness, convulsive twitchings of the muscles, anxiety, pale face, features sunken, small pulse, and delirium, we may select one of the following medicines: *Stramonium*, *Belladonna*, *Hyoscyamus*, and *Ignatia*.

In the early stage the remedy should be selected from *Belladonna*, *Stramonium*, *Ignatia*, *Cocculus*, *Acon.* and *Nux-vomica*.

Belladonna.—Agitation and continual movements; unceasing motion of the head and hands; feebleness, and uncertain gait, paralysis of one side of the body, so the patient draws one leg after him. These symptoms are characteristic of chorea proper. In more confirmed cases we see convulsive movements of the lips and *risus sardonicus*; absurd grimaces, feebleness and trembling of the tongue. Children poisoned by it showed: " continual agitation; they could not keep still nor remain erect; they threw themselves forward, extending their hands towards the ground; constant catching at small objects which they let fall; choreic convulsions.

Mr. Edwards gives in the London *Lancet* a case of poisoning by *Belladonna* which confirms the common observation of its power of producing a partial or imperfect paralysis, shown only in a want of due controlling power, almost confined to the lower limbs, and lasting some days after the other symptoms had subsided. Orfila found it to produce weakness of the posterior limbs; Pereira saw seven cases at the London hospital.

Symptoms affecting the nerves: "paralyis, sopor, or coma, power of the mind or of the will, over the muscles disordered, muscular movements irregular, causing staggerings and jerkings, weakened or paralytic condition of the muscles. Some French physicians have endeavored to show that chorea has its seat in the cerebellum. (*Watson's Practice*, Vol. I., p. 672.) Dr. Fuller gave Bell. to twelve choreic children in St. George's Hospital; in seven cases its action appeared decidedly curative, in two it failed to affect the spasms; in the other three cases the improvement was ascribed to other causes.

Stramonium.—The child totters in walking; vacillation of the limbs in walking or remaining erect; uncertain walk; he does not feel his legs under him, thinks he touches the ground when yet some distance off, causing false steps: precipitate seizing and losing the object he wishes to grasp; when holding it, he does not perceive it in his hand; babbling loquacity. Jahr has given some cures by *Stramonium*, but his cases are not clearly distinguishable from hysteria and other nervous diseases.

Hyoscyamus-niger.—Has only a few chorea symptoms; twitchings of the tendons, and choreic movements. (*Roth. Materia Med.*, 758. Par.)

Calcarea-carbonica.—Hahnemann observed under its use "ind

tinct twitchings and movements, either in isolated" or associated muscles. Jahr says: "Continual movements of the muscles which are under the control of the will, so that the patient cannot remain sitting or standing; the head turned first to one side and then to the other, gait shuffling and leaping; remission at night, renewal on awaking; incapability of seizing the object he may want; confused, tongue bitten in the effort to speak." The earlier symptoms here relate to the disease at an early stage; the later ones to it as fully formed.

Causticum.—Partial convulsions of the limbs, and of the muscles of the face. Jahr says: This is a principal remedy in serious cases, "Emaciation at first, with pallor, gait tottering; loss of memory and power to fix the attention; later, singular movements of the head, eyes, hands and feet; by degrees the patient forgets how to write, count, or talk with distinctness; finally, there is almost complete paralysis of the left side, with frightful convulsions of all the muscles, day and night. General convulsions occurring in the course of chorea, and continuing day and night, are unfavorable symptoms. Jahr says this remedy has been successfully employed in chorea, succeeding a retrocedent eruption of the head. (*On Nervous Diseases*.)

Rhus.—Twitchings in the extremities and muscle, unsteadiness of the limbs, vascillation of the extremities when attempting to stand or walk. Chorea occurring after a cold bath, or repelled measles.

Sulphur.—Sudden suppression of an acute chronic eruption having caused the disease.

Strychnine.—M. Trousseau administers a syrup of Strychnine, which he seems to have learned from Hahnemann, though he rejects the small doses. This we regret, as although he makes some fine cures he has certainly hastened the death of some of his patients. (See *Inaugural Thesis of M. Moynier*, Casa, p. 60.) This girl died from medicinal aggravation of the disease by an over-dose. We also learn from the same thesis, (p. 113,) that "choreic agitation augments from the beginning of the treatment, which should cause no uneasiness; reaction promptly supervenes, followed generally by rapid improvement."

Ignatia.—Extreme precipitation, involuntary lifting of the knees in walking; is obliged to sit down; tottering walk, liability to fall, false steps at the slightest obstacle. There are early symptoms of chorea. Hartmann recommends Ignatia in recent cases of chorea. It also produces "trembling of the whole body with pruritus and convulsions, so that he can hardly stand; convulsions greatest in the jaws, obliging the patient to distort the mouth, as in moderate laughter."

Nux-vomica.—Symptoms similar to the last; uncertain gait, with fear of falling; feebleness of the knees; trembling of one knee and one leg. Like Ignatia, it presents the remarkable phenomenon of

augmentation of distress by movement; which is diminished by repose, and disappears by lying down, a feature of chorea proper.

Coccus.—Has medicinal relations with Ignatia and Nux. The Coque of the Levant produces partial convulsion, incomplete paraparesis, difficulty of walking, &c., like the preceding. In homœopathic doses it has cured the following symptoms: absurd movements and gesticulations, sometimes of the hand or left foot; also of the facial muscles at each effort to speak, babbling gaiety, face puffed, red, and bluish, cessation of convulsion on going to bed, (*Jahr. Nervous Diseases*, p. 76.) Thus we have good reasons for using Coccus, Ignatia, and Nux-vomica in chorea. We distinguish in our selection between the peculiarities of constitution of each case. While M. Troussseau uses Sulphate of Strychnine in the most dissimilar of cases, and in dangerous doses.

Agaricus-muscarius.—Dr. Clifton, of Northampton, Eng., gives a case, with the following symptoms: Miss B., aged sixteen, amenia, six months ago showed spasmodyc twitching of upper lip and winking of right eyelid; then twitching of fingers of right hand; then movement of right arm and hand, and turning of it inward, so that she could not feed herself. The twitching and spasms *all ceased during sleep*; a little spinal tenderness in lower cervical vertebrae. Agaricus, 6° (centes.), twice a day. No improvement. It was changed for Agaricus, 2° (centesimal), twice a day. In a month she entirely recovered, and remained well a year or two after.

Agaricus is useful in spasmodyc affections, *ceasing during sleep*. In several cases of spinal irritation and tenderness in youths; in spermorrhœa; not the result of abuse, with pains and weakness in the thighs; also as a lotion for frost-bites on the feet of children, tincture one drachm to a pint of water; internally also.

Case by Dr. Bloede. A boy, aged ten years, sanguine temperament, merry disposition, had chorea at the age of ten years. Four months ago showed impediment in his speech; drags his right foot; losing control over the muscles of right arm and leg; limbs were in incessant motion; involuntary jerking; pushing or pulling in all directions; motions continuing all day and ceasing during sleep. Strong appetite; bowels natural; passed two long worms some time ago. Cannot control the muscles employed in talking, eating or drinking, or walking; disposition inclining to fun and mischief. *Hyoscyamus* was tried a week without benefit. *Agaricus-muscarius*, 3°, exhibited a slow but decided action upon all the symptoms at the end of a week's trial. Four weeks later he walked out alone, dressed himself without assistance; could drink alone; but muscular action of the mouth disorderly; speech and walking improved. *Agaricus*, 4°, gradually restored him to perfect health. (*U. S. Jour. Hom.*, Vol. II, p. 120.)

Case by Dr. Leopold.—A girl, aged twelve years, has had chorea for two weeks. The whole body and every limb in violent motion. After one dose of *Agaricus-muscarius* she slept for six hours. She continued to take it for eight weeks, four drops of the tincture, four times a day. The disease gradually abated. But she quickly got worse when she tried *Ignatia* or *Stramonium*. She had great appetite, slept for eight or ten hours at night, the bowels were regular, the mind clear, and the power of speech returned. She gained flesh, her cheeks rosy. She continued well.

Cuprum.—Hartmann and Jahr recommend this remedy in chorea; but their description of the disease is too vague for safe practice. Copper has the following symptoms suitable for true chorea: "Agitation of the body and limbs; convulsions of the face and eyelids." Gross cured with Copper a case of chorea produced by fright. "There were involuntary movements of the right arm and leg, passing gradually to the other limbs; so that while awake the patient was violently agitated; this was sometimes accompanied with loss of speech."

Iodium.—The occasional cure of a case of chorea with Iodine and Iodide of Potassium, call our attention to these articles. Iodine produces, says Hahnemann, "very great excitability; uncertain and vacillating gait; trembling in the lower limbs; zig-zag movements of the hands; muscular feebleness and incomplete paralysis; head confused and incapable of serious thoughts; when carried still further it gives the symptoms of a grave case of chorea, which is usually fatal—"trembling of the hands, arms, feet, and back, vacillating and uncertain gait; he can carry nothing direct to the mouth; zig-zag movements of the hands; motion painful; circulation accelerated; pulse filiform. Dr. Pells gave the Tincture of Iodine in solution for three doses. M. Guersent cured a child with Iodide of Potassium in thirteen days, in which sulphur baths and exercise had been unsuccessfully treated.

Iodine is more appropriate in scrofulous cases; but it cures only according to the Hahnemannian law of similars.

In the later stages of chorea any of the remedies indicated in the first stage may be proper; though *Calcarea*, *Causticum* and *Iodium* will be preferable.

Macrotryx-racemosa.—We have known one case cured by this remedy. It is the basis of a successful secret remedy for chorea.

Argentum-nitricum.—Allopathic cures of chorea have often been accidentally made with Nitrate of Silver, and Dr. Gross, of Regensburg,* gives some cases of great severity cured rapidly with this remedy by homeopathists, used at the fourth and also at the twelfth

* *Allg. Hom. Zeit.*, Vol. 64, p. 123.

potency. He compares it with Cuprum, Stramonium, Hyoscyamus and Cina. He says the abuse of the remedy in local application to the os and cervix uteri often produces symptoms in the regions of the eye, and respiratory apparatus, which point to its specific action on these organs, and suggest to us its therapeutic use.

When the symptoms have followed the drying up of chronic cutaneous eruptions, *Cuprum-acetate*, *Sulphur* and *Lycopodium*, will be called for; if they have set in after measles, *Calcarea-carb.* is proper. If the cause can be traced to masturbation, *Phosphorus* and *China* are applicable; if they have arisen from constipation and collections of faecal matter in the intestines, *Nux-vomica* and *Sulphur* are the best remedies; if the malady has been induced by excessive loss of blood, or by general debility, we advise *Ferrum*, *China*, *Acid-phosph.*, *Acid-nitr.* and *Rhus-toxicodendron*.

ADMINISTRATION.—In chorea, the whole nervous system is in a morbidly impressible condition, and will generally respond regularly to the higher attenuations. We usually commence with the twelfth dilution, and administer a dose once or twice daily, until a suitable impression is made upon the symptoms.

The *Spinal Marrow and Ganglionic System* are also affected by the sycotic poison; lightning-like, lancinating pains in the face and neck and along the spine; deadness of single parts; inarticulate speech, and, where the par vagum and glosso-pharyngeus are affected, we find a want of feeling of repletion; inability to digest, with normal taste; tympanitis, hernia, and prolapsus uteri and vagina, and of the rectum; paralysis of the urinary organs; impotence, with strong sexual desire. All of these sufferings are the result of the sycotic poison, and can be removed by *Thuja*, when in the earlier stages.—(Dr. Wolf.)

There are also some cramps, with great tendency to paralysis, and with remarkable variability. Also, the progressive atrophy of the muscles, being often the cause of some kinds of curvature of the spine and some forms of hip disease.

EPIDEMIC CHOREA.—*Religious Convulsive Affection of the 19th Century*.—(Dr. Barton's *Med. Journal*, 1805, Vol. II., p. 87.) This epidemic in religious chorea commenced in the summer of 1803, in Tennessee, only three years after the institution of the Camp Meetings, in which large crowds of people were collected together, encamping on the ground and remaining a week or two. The convulsive manifestations greatly increased till the end of that season, and afterwards continued to appear for a quarter of a century, when they gradually subsided. It was looked upon as the effect of a divine religious influence. It began among the Presbyterians, afterwards the Baptists, and then other denominations were involved in it. None were affected

with it but such as had attended the religious meetings, and nearly all took it before leaving the ground. They were of all ages up to sixty years, though the majority were young persons, more females than males. Scarcely one girl in ten between the ages of twelve and twenty escaped it. The affected were generally of the healthy of both sexes. None took the jerking convulsions in sleep. It had intermissions, but they were irregular, but lasting during absence from public worship; the attack might occur on sudden surprize, serious reflection, or depressing spirits. The subjects of it continued in good health, though some females appeared weakened. The paroxysm lasted a half hour or hour; though in some the spasm was momentary. At its first appearance, the effect on men was different from that on women. Men would tremble so as to make the seats at a distance shake; in some there followed what appeared to be painful writhings of the limbs or body, and tumbling about on the ground. At other times they began with one or more perpendicular vaults, as high as any man could rise in health; and this often attended with a deep loud sudden groan, as if from dreadful pain. After the first year or two, these manifestations were less marked, and in their place came a new symptom called the "jerks." This consisted in a sudden jerking backward and forward of the shoulders; the primary motion being chiefly in the breast. The men generally had but one jerk in several minutes, while in women the succession was as rapid as every second for fifteen minutes, each second the hair whipping the ground alternately before and behind. They were sometimes with a single jerk and a loud groan; involuntary laughing was a common symptom in 1803 and 1804.

The Running Exercise was common. The person starts suddenly, and, with remarkable swiftness runs fifty or a hundred yards, and then falls apparently lifeless; after the full length of one breath, he rises perfectly well. Others made, involuntarily, various gesticulations, dancing or singing.

The dance is a perpendicular motion of the body and limbs when erect, in some the feet moving alternately, in others, both moving at once; the hands and arms generally protruded and elevated, the head suddenly thrown back, the eyes closed by turns, and the movements are made with a graceful softness and elasticity. The subject now commences a tune which is uniformly in a flat key, not rising more than one-fourth of a note from the key note. The women in the beginning of the epidemic commenced with convulsive agitation of the breast, difficulty of breathing, with lamentations, cries, and ejaculations; to this succeeded the "*silent exercise*," involving a total extinction of perceptible breathing, during which the complexion was florid for half an hour; the mind was perfect but in a morbid state of excitement.

Premonitory Symptoms.—Compression or weight on the chest about the heart; motion gives relief; no other complaint of pain is made; the subjects of it are pleased with it and do not wish it to stop. They have an uncontrollable desire to attend religious meetings of a social kind. They always have peaceful pious feelings and emotions; and the desire of praying overcomes the bashfulness and timidity of all persons of all ages or sexes; they say it gives them relief. They all have an astonishing friendship for each other, and for all in a similar situation. Memory and even judgment are astonishingly strong during the fit. All the acts of their lives, particularly their bad ones, crowd with rapidity upon the mind.

The "Physical Manifestations," which accompanied the religious excitement of 1858 and 1859, in the North of Ireland, were morbid phenomena, having some affinity with those seen in hospitals among hysterical patients, and among females in all communities, in crises of excitement and agitation.

Symptoms: Insensibility; sudden relaxation of muscular power; prolonged convulsions; foaming at the mouth; rolling of the eye-balls; fixed and glassy stare; wild dreams; incoherent ravings. These phenomena are viewed by the friends as evidences of religious regeneration, but they are rather the indices of hysterical and epileptiform seizures, consequent on an overwrought condition of mind, and an enfeebled state of body, favored by prolonged abstinence and great mental excitement. The condition is one of induced disease, which in many will progress to insanity.

PATHOLOGY.—*Chorea—associated with Serous Apoplexy.*—A remarkable case is given in the *Medical Repository* for 1804. A robust man aged 40, began to complain of irregular or convulsive motions of the head, mouth and hands, which had been long observed in a slighter degree. After trying various remedies without effect (1801) he was affected with coma and stupor. Bleeding and purgatives relieved the latter symptoms, but the convulsive motions continued. A month after this he died.

No disease found anywhere except within the head. All the vessels of the brain were turgid with blood, and twelve ounces of fluid found within the ventricles. There had been no pain in the head, no strabismus, nor dilated pupils; it was therefore thought that the water had slowly accumulated. There was an enlarged state of the foramen ovale which connects the ventricles, which readily admitted the little finger. The cause of death was a sudden effusion to which the brain could not accommodate itself, by which serous apoplexy was produced. There was seen a general turgid state of all the vessels of the brain, for many vessels that carry only pellucid lymph in health were filled with red blood. The brain had accommodated itself to the slow effusion.

sion which had been long taking place; but it could not bear any sudden addition.

In remarking on this case, Dr. J. Redman Coxe, of Philadelphia, says: "Chorea then is not an idiopathic affection, but arises from the long-continued action of water on the brain; that is from chronic hydrocephalus. The hydrocephalus is generally rapid, but is sometimes chronic. This is when it comes on slowly, a portion of the fluid may be taken up by the absorbents, and the brain adapts itself to the pressure on the ventricles. When this is too slowly done, any sudden increase may be followed by various grades of serous apoplexy, palsy epilepsy, and occasionally St. Vitus' dance."

CAUSES.—Hydrocephalus and chorea may arise from the same causes. They may follow inflammatory fever or blows on the head, and both may be accompanied with symptoms of fatuity. Too rapid growth of the body in early life may determine to the brain and produce other diseases—sudden check of accustomed secretions. The muscles of the face are affected in both diseases, producing spasmus cynicus, risus sardonicus, &c.

Both diseases may be caused by intestinal irritation, as by worms. Neither disease is necessarily fatal, though either may be when the accumulation of water is rapid. Other animals are subject to both diseases, as is seen in hogs, dogs, horses, which have "the staggers."

Remedies for both chorea and hydrocephalus are: *Acon.*, *Bell.*, *Helleborus-niger*, *Hyoscyamus*, *Stramonium*, *Cuprum*, *Zinc*, *Sulph-zinc*. Of these *Zinc* and *Stramonium* are about the best.

BARBIERS.—A species of palsy frequently seen in India, Ceylon, Java, and the West Indies.

DEFINITION.—Tremor, with pricking, formicating pain; numbness of the extremities, principally of the lower, followed by contractions and paralysis of the limbs, inarticulation or hoarseness of voice, emaciation, and sinking of all the vital powers.

SYMPTOMS.—A formicative pricking pain begins in the muscles of the lower extremities, with numbness, tremors, and an imperfect command of the powers of locomotion. Both lower limbs are always equally affected, in some cases the fore-arms, hands, and powers of articulation are subsequently similarly seized. The patient becomes unable to walk steadily. Standing or walking aggravates the uneasiness of the limbs; he loses the use of the arms, sleeps imperfectly, becomes sluggish and inactive. The limbs afterwards lose all feeling and natural warmth; the extensor muscles become paralytic, and the limbs contracted. There is loss of appetite, indigestion, emaciation; the pulse gradually becomes frequent, thready, or fluttering; the vital powers become depressed, and death supervenes.

serum in the pleural cavity, sometimes in the pericardium; lungs gorged with black blood, their structure oedematous. Old adhesions in the pleura; heart soft, enlarged, and flabby; peritoneal sac containing serum; liver large, deep red, engorged with black blood. Spleen soft, large, loaded with black blood. Congestion of the veins and effusion of fluid within the spinal canal.

DIAGNOSIS.—Characterized by the paralytic symptoms, constant dyspnoea, universal oedema, leucophlegmatic intumescence of the countenance. It is a form of acute dropsy, distinguished from *Barbiers*, which is a species of *paralysis*, though they are often associated with each other, or barbiers becoming more severe assumes the form of beriberia.

CAUSES.—Beriberia is almost peculiar to India, to Ceylon, and the Malabar coast, and from Madras to Ganjam, extending not more than forty miles inland. It is most prevalent when the air is damp and cold; when changes of temperature are sudden; caused also by low diet, bad water; a strong and hot land wind. In Ceylon it is endemic in some districts, developing itself after a residence of some months. Mr. Dick found it most prevalent amongst intemperate soldiers who had taken much Mercury for venereal complaints; prolonged exposure to marsh exhalations.*

TREATMENT.—The British surgeons have employed all the means known to them in the cure of ordinary dropsies, and with but little success. We may rely on the same general measures, and the same remedies as we employ in the treatment of other forms of dropsy and oedema. *Arsenicum, Apocynum, Sambucus, China, Scilla, Solanum-nigr. Ferrum* are the best remedies.

ORDER III.—SYSTATICA.

COMPLICATED DERANGEMENT OF THE SENSORIAL FUNCTIONS.

SYMPATHETIC AFFECTIONS.—All the functions depend on each other; if one is disordered the rest must suffer in a greater or less degree. When the circulation becomes irregular in persons of irritable habit, every slight degree of it will often disorder the nerves of particular vessels or viscera when they are either approached suddenly, and, to a painful degree, by an over-proportion of blood thrown upon them, or when they are suddenly deprived of a moderate distending power which keeps them in due tone. The distention may be too great in some vessels, and too little in others; hence the alternate rigors and flushings, and great inequality of pulse and exertions, not only in nervous fever but in chronic diseases. This quick succession of extremes

* Duncan's Medical Commentaries. Vol. X. p. 207.

of distention and relaxation causes the debility which arises in nervous fevers. Females are subject to symptoms of depraved sensibility about the time that the menses are about to cease altogether. Spasms always increase the irregular circulation in which they originated.

The manner in which sympathetic communication is maintained between distant parts is well illustrated by the effects of decayed teeth in exciting neuralgia of the face. (See page 497.) When there is pain in the knee from a diseased hip the sympathy displayed is between the irritated part and the sentient extremity of the nerve.

Sometimes after introducing a bougie into the urethra there is a sickness of the stomach, pallor, faintness, and sometimes a single paroxysm of ague. A contusion on the epigastrium is often followed almost instantly by the most alarming symptoms, and even by death; and yet, on dissection no visible lesion of any organ is found. We therefore refer the fatal result to the shock given to the *semilunar ganglion*, and the various important nerves which radiate from that *sensorium abdominale*. In compound fracture of the legs there is sometimes pain in the loins, extending up the spine to the head; there is also restlessness, anxiety, furred tongue, nausea, vomiting, deranged secretions, perspiration, &c. The sensorial powers are greatly disturbed; and the patient dies of irritative fever, if the exciting irritation be not allayed by proper treatment.

"When there is an external injury of importance received," says Sir A. Cooper, "nature at once stops all the secretions and collects the resources of the system, the circulating fluid, within the heart and large vessels. These propel it with great force towards the injured part, to restore it by the process of inflammation. Sometimes her efforts are excessive and need to be checked; and, in doing this, it has been common for physicians to run to the opposite extreme." When the secretions are too promptly restored the restorative operations of nature may be checked. If we interfere by adding to the excitement, it is quite likely we shall develop an excessive reaction. This more frequently follows injuries of young persons and children than in older subjects.

The abscesses of the liver which are so frequently found associated with wounds of the head, have been referred by Baron Larrey to "the sympathetic irritation of the viscera from the inflammation in the fibrous membranes of the cranium, the bones of the extremities, and determination of ichorous miasm to the liver." (*Surgical Memoirs of the Campaign of 1812*.)

Sympathy between the mucous surface of the Prima-via and the Skin.—The office of the alimentary canal, or the internal surface of the body is analogous, says Wilson Philip, to that of the ~~ext~~ skin. And such is the sympathy between these two surfaces,

one is languid the other is generally affected in the same way. If we excite either, we at the same time affect the other in a greater or less degree. If the bowels are constipated we find the skin dry and shrunk; as soon as the bowels are restored to action the skin becomes soft and moist. When the secretion of the surface is suddenly checked, the fluid which should have passed off by it is thrown upon the internal organs, applying to the intestinal emunctories a stimulus which closes them, or lessens their activity. (On Fevers, p. 190.) In this way that constipation is produced which is the forming stage of dysentery. (See Johnson on Hot Climates. *Cutaneo-Hepatic Sympathy*.)

NERVOUSNESS.—*Coffee*.—According to Liebig, *Theine* and *Caffeine* constitute the essential elements of Tea and Coffee. They each consist of the chemical equivalents C₈, H₉, N₂, O₂. From this exhibition of the composition of coffee it is evident that it possesses some of the nutrient or plastic and calorifacient elements, and consequently is an aliment. But as ordinarily used it contains but little of value for the support of life; and its stimulating powers are chiefly dissipated in the process of its preparation.

Among the poor, especially in cities, weak coffee is one of the common ingredients of their meals, which are made up entirely of the poorest and cheapest materials attainable. The degree of stimulant found in the hot drink is accepted in place of that more healthful excitation nature designed to furnish in more substantial food. The blood ceases to form a concentrated solution of all the organic products and elements of the healthy economy; the waste of the tissues exceeds the repair; disintegration of structure predominates over the process of reconstruction. When this condition has lasted for an indefinite time, the structure of the organ becomes changed, their functions are impaired, and there is an approach to inferior organisms and to that of cold blooded animals; or the system is kept permanently in a state corresponding to anæmia, in which there is a constant tendency to collapse as in the last stage of a febrile disease.

Persons in this condition suffer a variety of vague and indefinable symptoms, anomalous in their character and perplexing to physicians: The animal heat is defective; "the dynamic force, identical with heat is equally depressed;" the mechanic or muscular power is low; the circulation is feeble, the digestive movements slow and defective; the patient is languid and exhausted; exercise augments the evil by expending the forces more rapidly than they can be produced; and the nervous functions are perturbed and depressed. These results are produced by a slow inanition or starvation which is not suspected, because a full supply of food is taken into the stomach. But the blood is deficient in the elements of heat and nutrition. It cannot be restored by medicine alone, but may be gradually renovated by appropriate

diet assisted by such remedies as may improve the digestive functions. The number of cases of this character has progressively increased from the time that the habitual use of tea and coffee became common among the laboring classes as well as the wealthy and indolent. Neuralgic forms of disease affecting the stomach and other viscera, formerly almost confined to the wealthy and luxurious order of people have since become equally common among the hard-working poor; and it is generally observed that the greatest sufferers are among those who rely most on tea and coffee as articles of food.

Influence of Coffee and Tea on Children.—In the early periods of life, the food should be made up of materials rich in the plastic elements, capable of furnishing the principles for forming the highest organic structures, and most readily favoring growth and development. “In the first fifteen years, nature is employed in constructing and perfecting the mechanism of life, fitting it for the conflicts, the exertions, the labors it must encounter and undergo in the struggles and difficulties of the great arena of the world, as well as with exterior malignant influences.” Without good materials a good fabric cannot be produced. (*Jackson, Amer. Med. Jour.* July, 1849, p. 85.) It is known that a large proportion of the human race die in infancy; and the bills of mortality show fearful ravages in the early years of life from cerebral disease. In cities especially, children begin life bearing the accumulated sins of their ancestors; and nature employs the few short years of their existence in abortive efforts to build up substantial organs from the most meagre supply of materials. In their earliest years nutritive action is perverted by over-excitement from excess of stimulus furnished in nerve-exciting drinks, or over-seasoned food.

Sensitiveness—Irritability of Temper.—Coffea.—Persons liable to be agitated by the most trifling emotion, when there is inward vexation, sleeplessness, and disposition to weep for trifling imaginary causes.

Nux-vom.—Great irritability of the nervous system, agitation, inclination to lie down, aversion to fresh air; stubborn refractory disposition; in females menstruation irregular.

Pulsatilla.—Persons of tranquil disposition, easily moved to tears, menses too late, insufficient or suppressed.

Chamomilla.—Patient very peevish and passionate.

Aconite.—When with anger there is fear, quick hard pulse.

China.—Patient subject to take cold and feel the influence of the weather; he becomes flighty or distracted from excessive pain, and is worse for being touched.

Veratrum.—Delirium and madness from the excessive pain.

Opium.—The best known action of Opium is to produce great tranquility of the system and to induce sleep. The opium-eater for the purpose of excitement; and literary men occasionally

the habit and become confirmed opium-eaters, in order to produce wakefulness and enable them to prosecute their studies during the night. De Quincey, whose interesting "Confessions" are well known used Opium for this purpose.

Thuja.—Deafness, without any organic lesions, often alternating with acute hearing, being often inherited by children. *Thuja* alone corresponds with this evil. (*Wolf*.)

Sleeplessness without apparent cause. This, says Dr. Wolf, grows more and more frequent, and resists all other remedies; and is only cured by *Thuja*.

The *Eyes* are affected with a peculiar kind of photophobia, amblyopia, amaurosis, sensation of a cold wind, either blowing out of the orbits or into them; partial paralysis of the upper eyelid, occasional squinting, with a peculiar shy unsteady look, &c. Similar affections of the eyes are only the consequences of small pox or sycotic gonorrhœa, and are also cured by *Thuja*.

Tea.—A strong infusion of *tea* produces *anxiety and palpitation of the heart*, in persons who are not in the habit of drinking it; on the other hand, if taken in small doses it is an excellent remedy for such symptoms when produced by other causes. (*Rau*.)

Effects of loss of Sleep.—*Remedies calculated to correct them*.—
Cocculus.—In persons who are much injured by sitting up at night feeling weaker if they only lose one hour's sleep; the head trembles is light, face flushed, blue circle round the eyes; mouth dry without thirst, loathing of food; nausea and fainting; sad; bad dreams.

Phosphoric-acid.—Better suited to some persons for the same symptoms.

Nux-vomica.—Sitting up occasions headache; injurious effects of coffee, wine or spirits; determinations to the head; worse in the open air, with a shaking sensation; head heavy; buzzing heavy feeling in the forehead; pale haggard countenance; nausea; chilliness; weak and irritable.

Ipecac.—The patient unable to lie down; headache from derangement of stomach.

Pulsatilla.—Mild disposition, headache worse in the evening, better in the morning, determination of blood to the head, sense of heaviness when moving the eyes, the head feels light as if empty; he cannot bear the light; better in the open air.

Arnica.—Feeling of soreness over the whole body.

China.—Patient greatly excited in the evening; does not sleep well, is weary when rising.

GENUS I.—ANTIPATHY.

1. ANTIPATHY.—Under this title a peculiar affection has been described by Cullen, Sauvages, Linnæus, Vogel, Ploucquet, Passament and Good. It consists in a feeling of internal horror and distress caused by the presence of objects which are beyond the limits of any of the senses; or which, through some occult power, produce sensible and painful effects on persons of peculiar constitution. Among the cases of singular antipathy, are enumerated persons who cannot endure certain odors which are imperceptible or not disagreeable to other persons; others are affected with strange feelings of horror at the sight of offensive but harmless animals; thus “a cat concealed in a room has been known to produce a most indescribable distress in a person who has perceived it by any one sense, and has been in no other way informed of its presence. Cabanis says, in some “singular diseases certain intellectual faculties are developed, which till that time had not existed. In some ecstatic and convulsive affections the organs of sense become cognizant of impressions to which they were insensible in their ordinary state, and even to receive impressions foreign to the nature of man.” He says he “has seen women who might have been excellent sorceresses;” that “some invalids can distinguish microscopic objects with the naked eye; some can see in profound darkness; others can follow persons by their track, and recognize objects they had only touched.” (*Rapports du Phys. et du Morale, &c.*) Cases of morbid innervation of much more remarkable character, are of frequent occurrence. Many of the best artists suffer intensely from excessive sensibility of the nerves. Dr. Moore says: “Wilkie was often obliged to shut himself up in a dark room, because the light was too stimulating for his brain, and Paganini paid dearly for his consummate excellence as a musician. Speaking to a friend he stated that he scarcely knew what sleep was; and his nerves were wrought to such almost preternatural acuteness, that harsh, even common sounds, often became torture to him. He was sometimes unable to bear a whisper in his room. His passion for music he described as an all-absorbing, a consuming one; in fact, he looked as if no other life than that ethereal one of melody were circulating in his veins; but he added, with a glow of triumph kindling through deep sadness, “It is the gift of Heaven.” Robert Burns was a remarkable example of this preternatural sensibility to physical and spiritual influences.

An interesting class of cases consists of persons who have a morbid sensibility to the electrical or magnetic presence of others. In these cases there is no *moral* antipathy to the persons whose presence causes painful sensations, but simply a physical repulsion which causes extreme suffering on their sudden approach.

We know some impressible persons, who, when they are reduced by ill health, sink into what they call "a de-magnetized state," when they remain alone; and though they need the very influence which another person throws off, they cannot bear to have it so suddenly thrust upon them. It causes spasmodic action of the muscles and extreme distress, even when the approaching person is entirely out of sight. When their influence is more gradually received, it is less perceptible, and is often beneficial.

The treatment of such cases consists in the restoration of the general health by treatment suited for the individual case; proper diet, &c. *Phosphorus* and *Hypo-phosphite of Lime*, are among the best remedies.

GENUS II.—DINUS.—VERTIGO.

DINUS.—VERTIGO.—CAUSES.—Vertigo may arise from causes which medicine may remove. Such causes are: disordered or foul stomach; profuse evacuations; abuse of ardent spirits; narcotic medicines; falls or blows on the head. Sometimes it is connected with other diseases, and is curable by measures which promote the general health.

TREATMENT.—A person subject to vertigo should be moderate in eating and drinking, should rise early, walk frequently in the open air, use the flesh brush at night.

Aconite.—Giddiness with nausea, eructations and vomiting, cloudiness of the eyes, loss of consciousness.

Pulsatilla.—Disordered stomach, nausea, vomiting, repugnance to food, dizziness from looking up.

Antimonium-crudum.—Similar symptoms, with greater prostration.

Arnica.—Vertigo after heavy meals, dimness of vision, whirling in the head, flushed face.

Nux-vomica *Chamomilla*, *Pulsatilla*, *Rhus*, or *Coccus*, are each suitable for certain constitutions.

Sulphur, or *Calcarea*, will answer well where giddiness results from the suppression of inveterate ulcers.

Mercur.-vivus.—The giddiness, with dimness of sight, appears only in the evening.

Belladonna.—There is sparkling before the eyes when moving, increased by stooping, with partial loss of consciousness.

Coccus.—Vertigo increased by sitting upright in bed, or by the motion of a carriage.

Phosphorus.—Vertigo, accompanied by headache, and a feeling of pressure on the top of the head.

Nux-vomica.—Giddiness from close thinking; better on lying down.

China.—Vertigo better when lying still; weakness in the head.

Rhus-tox.—Better on rising; Chamomilla, better on stooping; the patient feels that he is going to fall; thinks he will die.

Sulphur.—Dizziness, with bleeding of the nose. (*Hering*.)

Ipecac.—"Vertigo, dizziness when walking, with tottering when staggering," showing its direct action on the brain. Dr. Bayard, of New-York, gives a case in which vertigo was produced by the extravagant use of Ipecac.

A girl eight years old complained of vertigo. She had been subject to croup, which had frequently threatened her life. Ipecac., in allopathic doses, was repeatedly given to her, with the effect of alleviating the paroxysms of croup. She was considered as being promptly cured by it. The mother ventured on other occasions, to give her the same medicine whenever the symptoms of croup appeared; and it appeared always to check the disease with equal promptness. The attacks of croup became less frequent, and the remedy was eulogized. But the child complained of dizziness. When walking she would have vertigo to such a degree as to cause her to stagger. The doctor said that it was an affection of the *stomach*, and tried his remedies; but the vertigo continued. It was then referred to the *liver*, and a few blue pills were proposed. These being objected to, a homœopathist was consulted. Dr. Bayard found the symptoms to correspond with the pathogenetic symptoms of Ipecac. He says, "I gave the antidotes for Ipecac. and the child was relieved. In this case the vital current was determined to the throat, producing the phenomena we call croup. The Ipecac. in large doses, produced another disease by changing that current, and this relieved the croup, leaving, however, another more permanent disease."

Agaricus-muscarius.—*Case by Dr. Leopold*.—A woman, after cessation of the menses, was affected with partial deafness, prolapsus uteri, vertigo coming on so violently every day from two to six times, that she would fall upon the stove, at one time burning herself badly. Many allopathic physicians had tried to cure her without success. *Agaricus-muscarius*, 12°, a powder given morning and evening, wrought a cure. Two months after, there had been no relapse.

Tartar-emetic.—Is homœopathic to vertigo with scintillations, particularly on rising up, walking, or lifting any thing; heat in the head; violent headache, with vertigo and palpitation of the heart; pressure in the temporal region; dullness, drowsy and weary feeling, vertigo and nausea; weight and heaviness in the head, pressure, nausea, weakness, trembling, drowsiness, and aggravation of symptoms raising the head or walking. It is given successfully in dull head-

or vertigo arising from gastric derangements. Third trituration preferred in acute cases.

Hyoscyamus.—It possesses, in a high degree, the power of creating vertigo, as attested by many authors. (*Hahnemann, Mater. Med. IV.*) Accordingly Schenckbecher succeeded in curing a vertigo of twenty years' standing with this remedy.

Cyclamen.—*Case by Dr. Eidlitz, of Vienna*.—A young lady, after recovering from typhus fever, had constant trouble from vertigo. She took Cyclamen 3°, for three days, and the vertigo left her; but she now complained of obscuration of sight, diplopia and slight strabismus. The remedy was suspended, and in a week the cure was complete.

Two other cases, in ladies, aged 18 and 33, both recovering from pulmonary catarrh, were completely cured in two days, one by Cyclamen 15°, the other by the same remedy, 3°.

GENUS III.—SYSPASIA.—CONVULSIONS.

Convulsions.—(*Convulsio from convellere, "to tear or pluck up."*) This term is now applied to sudden spasmodic, involuntary action of the muscles. Convulsions are generally the result of disease, either functional or organic, of the cerebro-spinal axis; sometimes they are the effect of injury.

I. Those dependent on derangement of the circulation of blood in the brain or lesion of its substance.

II. Convulsions from direct violence done to the brain.

The morbid phenomena which originate in diseases of the great nervous centres, such as epilepsy, eclampsia parturientum, chorea, have, says Hahnemann, one cause for them all. This cause he considered to be PSORA. Later authors have considered the different manifestations of the disease known as syphilis, sycosis, and scrofula, as being dependent on different miasmas or dyscrasias. Dr. Wolf, of Berlin, says: *Sycosis* is "the result of the combination of psora and syphilis, in their highest potency." From this combination originate: tubercles, warts, varicose veins, gout, chronic catarrh of the urinary organs, Bright's disease of the kidney, diabetes mellitus. "Syphilis is an effervescence of sycotic poison. Vaccination causes much chronic disease, which manifests itself under the various forms to which some of the above names are given."

The following diseases of the psoric origin will be treated of elsewhere under their respective names:

1. Rheumatism, gout;
2. Catarrh;
3. Morbid affections of the nervous system;
4. Diseases of the bones.

Pathology.—In inflammatory affections mental excitement is an indication of inflammation, or irritation of the hemispherical ganglion; and convulsions are indications of irritation or inflammation of the tubular neurine, either where it is in contact with the vesicular neurine, or in its course to the muscles of the vesicular neurine from whence the power which excites the muscles emanates.

Thus the same law holds good, that irritation of the cerebral substance, either by inflammation or by mechanical means, first excites its *normal* action, though it may lead to its ultimate destruction.

Many cases are given in the books in which the brain is injured, and convulsions attack the side of the body, the same as that injured, and paralysis appears on the opposite side to that injured. Some think the convulsions are produced by inflammation and the paralysis by the mechanical compression of the brain. In the convulsions which appear as the most serious phenomena following an injury of the head it is remarked, that if the convulsions occur within a few hours after the accident, it is generally indicative of laceration of the brain; if it does not supervene for some days, it is dependent on subsequent inflammation.

DIAGNOSIS—Indications of the Eye.—The iris is designed to protect the retina as an intelligent curtain to guard it from injury. In diseases of the globe of the eye, the dilated pupil indicates more or less pressure on the retina by some cause in the globe itself, such as permanent turgidity of the choroid. But if with a healthy eye, in connection with a blow on the head, we find a dilated pupil, we have the sign of some pressure or injury to the nerve in its course within the skull or the ganglia in which it terminates.

A dilated pupil, then, indicates very serious injury to the optic nerve or the nervous centres with which it is connected, though it may happen in a case of severe concussion, that the injury may be remedied.

The contracted pupil, on the contrary, indicates an irritability of the nervous instruments, an undue excitement of their natural function, not an alteration of it. When we see in case of injury of the brain, dilation of one pupil and contraction of the other, we find the most severe injury of the brain on the side opposite the dilated pupil.

Symptoms of Compression from Depression of Part of the Internal Table of the Skull.—Entire loss of consciousness; the mental faculties are suppressed and he cannot be aroused. Many of the functions of vegetative life are less interfered with; breathing labored, stertorous; often the sphincters are relaxed; excretions passed involuntarily.

3. CONVULSIONS OF CHILDREN.

Convulsions, in some cases, result from an appreciable cerebral disease; in others they develop themselves spontaneously, or in the course of affections of a very different nature, without any connection being visible between the prior disease and the convulsions; and also, without leaving any pathological change in the structure of the brain appreciable to our senses. We make, therefore, the following division of these forms of disease for practical purposes:

1. Convulsions without primary lesion, or without appreciable changes of structure from sympathetic action originating in other organs.

2. Convulsions symptomatic of lesion of the brain or its appendages.

Diagnosis.—The diagnosis of convulsions in children is always involved in the question of their origin. In illustrating this question, M.M. Billiet and Barthez say: "A child, from one to six years of age, is suddenly seized with convulsions. He is strong, robust, sanguine; the attack has followed a sudden fright, a blow, a fall, or indigestion; that is, some appreciable occasional cause. What is the affection he is suffering from? You are in doubt whether the convulsion is primary, sympathetic, or symptomatic, or whether it is not a prelude to epilepsy. If the child was quite well; if the determining cause is well made out, if the constitution is good, and the fit not violent, you may suspect it is a primary or sympathetic convolution, or an attack of epilepsy. You examine with care the various organs, and after you have assured yourself that there exists no symptom of pneumonia, pleurisy, &c.; you hesitate only between deciding between its being a *convulsive* or an *epileptic* attack, and are obliged to trust to the future for the solution of this doubt—acting in the mean time according to the urgency of the case, just as if you had to do with a simple case of convolution." If at the time of the attack there was already some disease, as pneumonia, pertussis, &c., we may decide that the case is evidently sympathetic of the visceral lesion; is it also symptomatic of brain disease? In the great majority of cases it is not so. The brain is suffering sympathetically, and not from any disease of its own substance that need to cause any new alarm; though it may still be dangerous.

But when convolution attacks a child already the subject of chronic disease, if for weeks or months it has been losing flesh, color, and strength; if it has excessive appetite, irregular digestion, or vomitings. If we learn that the parents were phthisical, or that it has been brought up in hygenic conditions fitted for the generation of tubercular disease; then, although the convolution may even be the result of

an appreciable occasional cause, we must fear that the attack is but symptomatic of some grave cerebral affection." (*Maladies des Enfans.*)

When the child is more than ten years old the diagnosis is much easier, for it is rare at this age for convulsions to be sympathetic; and they are, for the most part, symptomatic of disease of the brain, or constitute a first attack of epilepsy.

A most important point in the diagnosis of all cases of convulsions in children, between the ages of four months and three years, is the condition of the teeth and gums. During this whole period, the protracted and perilous process of dentition is going on; and there is hardly a week or a month in which there is not a high degree of irritation and fever excited by the inflamed gums. In a great proportion of the many cases of convulsions in children, we have seen the convulsions have ceased immediately after the swelled gums were freely scarified.

PATHOLOGY.—In ordinary cases, in which convulsions suddenly attack a child which has been generally healthy, there is a temporary congestion of the brain at the time of the spasmodic paroxysm. This may be the case in children previously feeble and anæmic, but in them its duration is short, if it exist at all. In most children who have died from convulsions, we find traces of congestion; but in many no traces of hyperæmia are discovered; and it is now well known that convulsions of various forms often arise when the state of the brain is absolutely anæmic.

In those cases in which traces of congestion are found in the brain on dissection, it is often difficult to decide whether the hyperæmia has preceded or followed the attack, or whether it has coincided with it. Many recent authors have avowed the opinion that the marks of congestion originated in the convulsive effort, and are scarcely ever the cause of it. But it is easy to understand that a sudden congestion may produce a convulsive attack, just as we see this phenomenon result from an effusion of blood into the cavity of the arachnoid or the substance of the brain. "But we maintain that frequently things come to pass in another manner; and besides the hyperæmia there is a lesion of innervation, which is the proximate cause of the phenomenon. The solution of this problem is not a mere matter of curiosity. Practitioners have, in fact, but too great a tendency to treat all combinations by bleeding—a practice useless, and often fatal." (*Rilliet and Barthez. Maladies des Enfans.*.)

Precursory Symptoms.—Bad humor, whining mood, sudden starting during sleep, sleeplessness, screams without sufficient cause, frequent and rapid change of complexion, sudden relinquishing of the breast, &c. In other cases there is heat and redness of the gums during dentition, fever with eruptions, vomiting, morbid appearance of the

stool, acidity of the stomach. In some we see only what are called "internal spasms," displayed in distortion of the eyeballs, which are rolled upwards, so that only the whites can be seen; the facial muscles are trembling, and the child seems to smile during sleep; the breathing is anxious and irregular; after a violent interruption of breathing, the child suddenly takes a long, deep inspiration; the limbs twitch during sleep, the thumbs and toes are clenched, and the feet are bent toward the retracted abdomen. Sometimes there is a livid color around the mouth and eyes; the nose and features become pointed.

Paroxysm: distortion of the features, staring and rolling of the eyes; throwing the head backwards, convulsive jerking of the chest and abdomen; panting, breathing, hoarse cries, or moaning, rigidity and alternate shocks of the extremities. The face swells, becomes dark-blue, purple-red, gradually the whole body assumes the same color, and the jugular and frontal veins swell; hands and feet frequently remain cold, though the temperature of the skin is elevated. In this case the condition of the brain is one of hyperæmia; the spasms are of a *tonic* or *tetanic* character. It must be distinguished from one in which the *anæmic* condition prevails; there is pale, sunken face and cold skin; the conjunctiva and cornea are deprived of blood, and are without lustre. The spasms are *clonic*, and proceed from the face, or abdomen, or chest.

Intervals.—After the spasm has lasted a few seconds or more, there is relaxation and subsidence into a state of languor and comatose stupefaction. This interval is commonly short, and the symptoms of cerebral congestion continue. We have still the hot face, injected eyes, restlessness or coma, fever, &c.

Convulsions after Injury.*—A boy fell from a swing, which produced concussion of the brain and spine, and he was carried home in an unconscious state. Arnica was given, and cold compresses were applied to the head; there was headache and vomiting; but next day he was thought to be well. On the fourth day afterwards while at school, without previous bad feeling, he was suddenly attacked with clonic convulsions. Dr. Trinks found him perfectly conscious and free from pain in the head and back. No tender spot was found in the spine. Convulsions occurred in irregular intervals, drawing the body and limbs in different directions, and lasting from five to ten minutes, no trismus. In the intervals the boy was tired and sleepy but could not sleep, pulse, breathing, stool, and urine natural.

Stramonium 2^o decimal dilution, three drops every hour in water, the interval to be lengthened if the symptoms subsided. The spasms returned in six successive paroxysms, each being weaker. He took six

* Muller's Homœopathic Quarterly.

doses of the medicine, felt well with no pain in back or limbs. In the evening he fell asleep, slept without symptoms of disease through the night, and there was no return. He had had six paroxysms each succeeding the other in severity, occurring at shorter intervals; after taking Stramonium the attacks diminished in severity, and the intervals grew longer till they ceased. Whether the remedy positively cured the disease in this case or not the physician gave it the opportunity which many homœopaths seldom give to a *single remedy*. We think that a very common cause of failure in this day is the *frequent repetition of remedies*, giving too many articles at a time, or changing too frequently from one to another. By this irregular warfare against disease, says Dr. Trinks, "*all real observation and experience are made impossible.*"

Zizia-aurea.—The seed of the Zizia-aurea, or Masquash-root have been used in domestic practice for the cure of epilepsy.

A gentleman chewed a piece of the root and was immediately seized with nausea, vomiting, spasms, general convulsions and fainting fits, which terminated in death in three hours. A young lady ate a root of it, and was soon seized with violent vomiting, spasms, swooning, and convulsions. She recovered after full vomiting, and rest for a few days. The odor of the root produces nausea, faintness, and lassitude. We have cured two cases of epilepsy. In one case which had lasted ten years, the fits occurred as often as once in eight or ten days. Drop doses of the third decimal dilution were given morning and evening every alternate week for two months, when he was cured as appeared three months afterwards. Taking an over-dose caused "unusual exhilaration of spirits; lightness and pain in the head; sensation of tightness around the forehead, and at the back of the head; increased physical strength, with inclination for muscular exertion."

SYMPOMS.—Intermittent severe pains in the head, coming in place of uterine contraction during the progress of parturition. Sometimes the pains are extremely severe and proceed to convulsions, which are followed by stupor. This plant is a poison producing convulsions of this character, followed by stupor and profound comatose breathing. It has been used in a case like that above mentioned. The first dose seemed to palliate, the second dispelled the disease. In these cases the spasm is preceded by a peculiar feeling at the epigastrium, and this occurs at the moment when there *should* be contractile effort of the uterus. It has often been dispelled by re-exciting uterine contraction by Ergot in small doses, and also by irritation over the fundus, through the parietes of the abdomen, in the manner common for stopping haemorrhage.

Cedron.—Periodical Convulsions.—A female child, aged fourteen months, of unusual precocious development, suffered from convulsions

caused by dentition. Attacks came on every day at 5, p. m., and lasted ten minutes; beginning with dull appearance of the eyes, livid face, chills, followed by convulsions of the upper and lower extremities, and insensibility. On recovering from the paroxysm she remained dull and somewhat lethargic. A warm bath and Ignatia had no effect. Two hours before the third paroxysm she took two globules of Cedron 30°, dry on her tongue. Twenty minutes before the usual time the paroxysm commenced, but was modified and of shorter duration; she was conscious, but looked weak and depressed; repeated the remedy, gave some to the nurse, the dose was repeated the next day, and the child was cured.

4. *Epileptiform Convulsions,—Periodical,—Cedron.*—A woman, aged twenty-seven years, of nervous temperament, in seventh month of utero-gestation, had regular paroxysms morning and evening, at the same hour;—intense pain in the forehead; tumid face, pupils much dilated; feeling of giddiness, resulting in her falling down in the most distressing convulsions; insensibility; closed teeth; frothy secretion of the mouth; difficult respiration, irregular pulse, palpitation of the heart. This state lasted for six or eight minutes. On recovering consciousness she felt weak, and discharged a large quantity of clear urine. The first attack was brought on by witnessing the execution of a criminal. After four paroxysms had been treated allopathically by antispasmodics, Cedron 12° was given, which cured her, after the second paroxysm.

Dr. Casanova considers Cedron an infallible specific to certain non-febrile paroxysmal affections whose type is characterized by *periodicity*. This periodicity is the *typo-symptom*, or emblem of symptoms—a symptom *par-excellence* which leads other symptoms either in regular or irregular periods of time, and in a greater or lesser degree of intensity. And when a given disease is periodically governed by the *recurrence* of the same symptoms (be they what they may) at *fixed* and in *definite* intervals, *Cedron* then meets that phenomenon homœopathically and specifically at once.

Opium.—A case resembling the agonies of death, in which the patient was convulsed to such a degree as to deprive him of his senses, alternating with attacks of spasmodic breathing, sobbing, stertorous respiration, icy coldness of the face and body, lividity of the feet and hands, feebleness of the pulse, was treated by Stütz, without success, with Ammonia. He then tried *Opium*, which cured it in a speedy and permanent manner. Schweikert and others have seen the whole of these symptoms *produced by Opium*. (*Hahnemann.*)

According to Vicat, Grimm and others, *Opium* also produces a powerful and almost irresistible tendency to sleep, accompanied by profuse perspiration and delirium. Osthoff, meeting with an epi-

demic fever in which these symptoms were prominent, was *afraid to give Opium*, and proceeded to exhaust all his other resources. But failing with all, and seeing his patient at the point of death, he resolved, at all hazards to try a quantity of Opium; "its effects proved salutary as they always must, when given according to the unerring law of homœopathy."

Other Symptoms of Opium.—Sense of weight in the head, heat of skin and difficulty of perspiring; pain in the head; burning febrile heat; dry harsh skin; also, profuse debilitating perspiration, hectic night sweats, violent headache, tension and hardness of the pulse; dry and rough skin; burning heat, and extreme agitation. All of which are caused by the use of Opium.

Cuprum.—The presence of convulsions in the cases of poisoning by Cuprum, published by different authors, might lead us to consider this remedy applicable in convulsive diseases. Another case is given by M. Julia Fontanelle. A man intentionally poisoned himself with a solution of copper in vinegar, previously prepared by keeping several sous-pieces seven days in that fluid. He was found three hours afterwards in a state of insensibility, with the jaws locked, the muscles rigid and frequently convulsed. The breathing was interrupted and the pulse small and slow. He eventually recovered. (*Jour. de Chirurgie Medicale*, V. p. 413.)

Dr. Kissel gives a case of a girl, aged twelve. She had been in good health up to May 26th, when she was suddenly seized with sudden twitching of all the extremities, and of the muscles of the chest and face, lasting for an hour, and accompanied with loss of consciousness. She afterwards complained of pain in the whole of the head, in the back and epigastrium. A gentle touch of the scalp or pit of the stomach was painful, and all the vertebrae felt great pain on slight pressure. Child extremely debilitated, could not raise itself in bed. Skin hot; pulse small, quick, 140. Coated tongue and bitter taste. After some treatment which removed the febrile symptoms and the pains in the region of the nervous centres, there was no other attack, but the debility continued to such a degree that another attack was looked for. She took Acet.-cupri, six drops, every hour. Under this the debility gradually disappeared, and by the time half an ounce was taken the child was strong and continued to be so.

Ignatia.—We are assured by Hermann, Valentin and others, that Ignatia is efficacious in the cure of convulsions. It would be impossible to conceive why it should do so, if we did not know it capable of producing *similar convulsions*, as witnessed by Bergius, Calmelli, and Durius. Fritze saw Dulcamara produce *convulsions*, and De Haen witnessed the *very same effects attended with delirium*; on the other

hand, convulsions attended with delirium, have yielded to small doses of Dulcamara.

Ictodes-fextida—Skunk Cabbage.—In former years we treated some cases of severe epileptic convulsions, in persons not habitually subject to them, with this remedy; we used it only in an infusion, without much regard to quantity. The cases were all associated with fever and the treatment embraced other means calculated to cure the fever; but it was evident that the infusion of Ictodes had a specific power on the convulsions.

This plant has been shown by Dr. Turner, (*American Journal of Pharmacy*, Vol. II., 1.) to contain a volatile fatty matter, volatile oil, wax and starch, besides 20 per cent. of fixed oil. The seeds and root are stimulant, anti-spasmodic, somewhat narcotic. In large doses they cause vomiting, vertigo, dimness of sight. In smaller doses it is expectorant, a palliative in phthisis and asthma; curative in chronic catarrh, rheumatism, hysteria. The leaves are used to keep up the discharge from blisters. It becomes almost inert from drying.

Symptoms.—Head.—Headache in different points—of short duration.

Mouth, Pharynx, &c.—Violent sneezing, inducing pain in the fauces, palate, pharynx, down to the stomach, and long-lasting after-pains in the region of the orifice of the stomach. Swelling of the cervical and maxillary glands; burning from the fauces down to the chest. Sensation in walking as if the bowels were shaking; soft stool. Pain in the chest and under the shoulders, which seems connected with the burning in the pharynx. Aching pain in the sternum; sudden feeling of anguish, with oppression of breathing and sweat.

5. *Cramps in the Limbs.*—Cramp in the calves of the legs, the soles of the feet, and in other parts of the body disturb some persons on going to sleep, others suffer from them during the day.

TREATMENT.—Exert the muscles affected in voluntary effort; rise from bed and walk or otherwise exert the limb; press it against the wall or the bedstead; or press or rub it severely with the hands.

REMEDIES.—*Veratrum* taken before going to bed, and repeated for a few nights, will generally overcome the predisposition to the complaint. When it fails try *Sulphur* or *Colocynth*.

Rhus-tox.—Cramps which occur during the day, especially while sitting, as well as those which come on at night.

Lycopodium and *Sepia*.—Cramps that occur principally in walking.

Sulphur.—Attacks that come on at night.

Colocynth.—Cramps which occur at night; also for the stiffness and soreness which frequently remain for some time after an attack.

6. HYSTERIA.

Sydenham, Stahl, Van Swieten, Sprengel, and Frank regard *hysteria* and *hypochondria* as substantially the same disease. The two maladies unquestionably bear a very close resemblance to each other in many respects; as, for example, the almost infinite variety and similarity of the symptoms which they present, and the proneness of the subjects of both diseases to exaggerate trivial or even imaginary ailments into disorders of magnitude.

But there are marks of distinction between them equally important, which refute conclusively the opinion respecting their identity.

Pure *hypochondria* almost invariably occurs in individuals of a lymphatic and bilious temperament. Their dispositions are generally gloomy and morose, and ever inclining to "look at the dark side." Hope, confidence, cheerfulness, enter but sparingly into their dispositions; they are not addicted to "building castles in the air;" never beheld anything bright, agreeable or desirable in the future; but looking with distrust and aversion upon mankind, and obstinately fixing their thoughts upon some dreadful impending calamity, which they are sure will overtake them, sooner or later; they either drag out a miserable existence, suffering mentally almost every evil, or terminate their woes by suicide.

Hysteria, on the other hand, usually occurs in females of a nervous, or nervous-sanguine temperament, with cheerful, lively and ardent dispositions, vivid imaginations, and highly impressible organizations. Hypochondria is uniform and continuous in its course, and presents but slight variations from day to day. *Hysteria* occurs in paroxysms, with intervals of greater or less duration, of passable bodily health and spirits. Hypochondria is always connected with disorder of the stomach and liver; hysteria is owing to an irritation or erethism of the whole nervous system. Writers have always regarded the seat of hysteria as in the uterine and sexual organs, because it has usually been associated with derangement of the functions of these organs. It occurs after the period of puberty, in females of a nervous, or nervous-sanguine temperament, with strong sexual propensities, and is accompanied with deranged menstruation, dysuria, sexual excitement, or pains in the pelvic region. Yet the malady seems evidently to be of a purely nervous character, consisting of an erethism of the whole nervous system and capable of being brought into active operation by any exciting cause which may operate upon the economy, like deranged menstruation, the depressing emotions, fright, terror, mortification, dread, chagrin, disappointed love, undue excitement of the sexual organs, &c. This peculiarly irritable condition of the nervous system

may exist for an indefinite length of time, without any actual development of proper hysterical symptoms, provided the above-named exciting causes do not operate.

DIAGNOSIS.—Sometimes the first symptoms of hysteria are flatulence pains, or distressing sensations in the stomach, bowels, chest, head and back; faintness, vertigo, bitter taste, eructations, dysuria, anxiety, depression of spirits, difficulty of breathing, sense of suffocation from something like a ball rising in the throat, (or *globus hystericus*,) ringing in the ears, delirium, or loss of consciousness. Symptoms of this kind take place in individuals of a feeble and purely nervous temperament, and the *delirium* and *loss of consciousness* appear to take the place of convulsions.

In others, of a nervous-sanguine temperament, with robust constitutions, the convulsive paroxysms come on by slight twitchings of the muscles of the mouth and eyes, with wild expression, eyes rolled up, convulsive laughing, crying, or sobbing, constant attempts to pull out the hair, to strike the breast or some other part, or to bite; difficult or laborious respiration, succeeded in a short time by the most violent convulsions.

In other instances the paroxysms are preceded by a croupy cough, or colic pains, or pains in the head, chest, back or pelvis.

In some cases the paroxysms take place suddenly, without any warning symptoms, and the patient may suffer a series of dreadful convulsions, with only brief intervals of consciousness, for many hours, and then be restored speedily to all her mental and bodily faculties.

It would be useless to attempt a detail of all the phenomena which may occur in hysteria, and we shall, in conclusion, only observe, that the peculiar condition of the nervous system upon which the disease is dependent and the convulsive paroxysms to which this morbid state gives rise, should command our principal attention in the treatment of the malady.

CAUSES.—The *predisposing* causes are: a delicate, nervous temperament, too much confinement in close and heated apartments, the frequent perusal of exciting works of fiction, attendance upon theatrical exhibitions, tight-lacing, want of exercise, premature tasking of the mind to the neglect of the body, habitual indulgence in lascivious thoughts, nervousness, luxurious living.

Amongst the exciting causes may be mentioned: violent mental impressions of any kind, whether produced by the sight of disagreeable objects, or the smell of disagreeable odors, or the hearing of sudden noises, discordant sounds, or by terror, fright, anger, rage, grief, chagrin, mortification, and disappointed love or ambition.

Hamilton supposes the presence of irritation and indigestible substances in the intestines is a common exciting cause of hysteria.

Other exciting cases are: sudden suppression of the menstrual discharge, too profuse evacuations, uterine irritation, and leucorrhœa.

Hysteria has long been regarded as dependent on spinal irritation. From the extent of the spinal cord and its connection from one extremity of the trunk to the other, and its connection with the cerebral nerves, it must exercise an extensive influence on the phenomena presented by various diseases too often overlooked. The publication of Teale on Hysteria, drew public attention to the subject, and lessened the excessive medication and depletion which was then going on. A case mainly caused by that treatment is thus given: A lady aged twenty-six, had been bled and otherwise reduced, for inflammation of the lungs. She was then seen to be suffering from debility, with occasional peculiar lassitude, which compelled her to go to bed, where she spent most of her time; pulse natural, tongue clean, appetite good, bowels and skin natural. But occasionally there came on tightness across the chest, difficulty of breathing, which after a short time disappeared. The physician prescribed tonics for the "debility;" but ten days passed without improvement; at a loss what to do, he examined the spine, and found three dorsal vertebræ quite tender, and pressure upon them caused stricture of the chest. External irritation over the seat of tenderness was the only treatment thought of, and in that case it produced such amelioration of the suffering that the lady, comparing it with the result of other treatment, was grateful. It was formerly common to attempt to cure acute neuralgic attacks in hysterical females by bleeding; if there was some temporary palliation of the pain, the physician was satisfied; when the pain returned he repeated the bleeding.

TREATMENT.—For the cure of hysteria, arising from a torpid state of the bowels, and an accumulation of undigested faecal matter, and attended with putrid or sour taste, bitter or acid eructations, flatulence, fullness, distention and pain in the epigastrium, constipation, nausea, weakness, languor, faintness, headache, giddiness, confusion of ideas, strong tendency to convulsions, *Nux-vomica* and *Sulphur* are the proper remedies. When the attacks appear to have been excited by derangement of the uterine functions, the most suitable remedies will be: *Pulsatilla*, *Sabina*, and *Silicea*.

If the exciting cause has been terror, fright, anger, disappointment, mortification, or any violent, mental excitement, *Ignatia*, *Hyoscyamus*, *Aurum*, *Belladonna*, *Coffea*, will each cover most of the symptoms.

Administration.—The remedies should be administered at the third dilution, during the paroxysm, by placing a drop upon the tongue at short intervals, or by smelling; but during the intervals, a drop once in twelve hours, until the desired impression is produced.

Pulsatilla.—*Case by Dr. Cramoisy.* A girl aged eight years, of

healthy family. At the age of two years, was aroused from sleep by convulsive movement of the head, subsiding in a few moments, and renewed on again falling asleep. As she grew older, the spasms continued to recur, she learning to facilitate the lateral movements of the head, by holding it in her two hands, each spasm lasting three or four hours. At the end of five years she was affected by a barking cough, which would continue from five to ten hours incessantly. The child being conscious of its coming and of its disappearance. After this had lasted three days, Dr. Cramoisy found the case to be a neurosis of the larynx, constituting a symptom of hysteria, the cough simulating the bark of a dog. There was pain in the head and eyes, with photophobia and dilatation of the pupils. Bell., Ignatia, Cuprum, were tried without result. Pulsatilla 6°, was then given, two drops in a tumbler of water, a table-spoonful every four hours. The spasms ceased after the third dose, and the cure was rapid and complete.

Hyoscyamus.—The symptoms taken collectively, as witnessed by many authors, present a picture of hysteria of considerable severity. Accordingly, we find in J. A. P. Gessner, Störck, and in the *Act. Nat. Cur.* (IV., obs. 8,) that a case of hysteria, which bore great resemblance to *Hyoscyamus*, was cured by the use of this plant.

According to J. H. Lange, nutmeg has been found efficacious in hysterical fainting fits. The sole natural cause of this phenomenon, is homœopathic, and can be attributed to no other circumstance, but that the nutmeg, when given in strong doses to a person in health, produces, as stated by J. Schmid and Cullen, *suspension of the senses and general insensibility*.

Cuprum.—*Chorea* and *Hysteria*, are convulsive diseases. In two cases, already referred to, the breathing was impeded—an indication of its homœopathicity to spasmodic asthma. From the commencement of the action of the poison, pain in the stomach and colic were present in the majority of cases, and might induce us to select this medicine in a case of cramp of the stomach; we should feel further justified in having recourse to this remedy, because cramps in different parts of the body, frequently result from long-continued use of small doses of the cupreous compounds.

Caulophylin.*—Spasmodic pain in the uterus, stomach, bowels, &c.; tendency to spasmodic forms of hysteria; threatened abortion. Its action in small doses is primarily on the uterine motor nerves, thus controlling spasmodic action of the uterus; it also affects the motor nerves generally. Secondarily, it acts upon the nerves of sensation, causing neuralgic and rheumatic pains.

Its effects on the motor nerves of the uterus, are considered equal to those of *Secale*, though in other respects there is little resemblance

* *Leontice Thalictroides*, *Caulophyllum*, *False Cohosh*.

between these agents. Caulophylin is said to be capable of causing abortion; but that it will also prevent it when threatened, if the ovum be not already detached.

It is used in rheumatism, dropsy, epilepsy, hysteria, cramps, amenorrhœa, dysmenorrhœa, chorea, leucorrhœa, hysteritis, hiccough, to hasten delivery, and to relieve after pains. In atonic conditions of the uterus; passive haemorrhages, and prolapsus uteri. In five grain doses it is said to excite uterine contraction more decidedly than Ergot.

7. EPILEPSY.

Epilepsy.—The name is derived from Επιλαμβάνω, to invade, attack, oppress. It was described by Hippocrates by the title of Morbus Sacer, though he rejected the idea of demoniacal possession. It was most fully described by Aretæus.

Epilepsy has been known from the most ancient times. It was common in the day of Hippocrates, who described it; and at the present day it is estimated that in every one thousand persons six are epileptic.

Symptoms.—The patient, when in apparently perfect health, is affected with a slight flush of the face, then a scream more unearthly and horrible than any sound uttered by human creature. The whole body becomes convulsed; he falls forwards, if sitting, if standing, generally the same way. Sometimes there is a slight warning. The jaws are fixed, the tongue being frequently caught between them on their sudden closure, and severely bitten; expression of suffering is agonizing. There is bloody, frothy saliva issuing from the mouth; head drawn upon the chest, the body curved forward; thighs flexed, hands violently clenched. One side generally more affected than the other; the same side always the worst; countenance livid and distorted. The carotid arteries are distended and beat violently. The seminal fluid generally ejected during the paroxysm by the convulsive action of the ejaculator muscles.

Gradually the muscles relax; the eyes open, they are blood-shot, turned upward with a ghastly expression of death; the breathing slow, gasping, stertorous, as if approaching death. In a few minutes the countenance becomes natural, breathing gradually less stertorous; and now, if undisturbed, he will fall into a deep and tranquil sleep; he wakes after half an hour or more, wholly unconscious of what has occurred, or of the fearful ordeal he has passed through.

In some cases he opens his eyes and looks about him a few minutes after the attack, as if nothing had happened. Generally there is coma. If the fits succeed each other rapidly in considerable number the coma may last for days or a week, and is sometimes succeeded by

complete mania. Something depends on whether the patient is kept awake or not. If disturbed or annoyed by seeing strange faces around him he is generally worse.

Case by Mr. Solly. A gentleman had twenty-four fits in forty-eight hours, occurring exactly every two hours. He usually had fever fits, but was made worse this time by opposition of the servants, who prevented him from leaving the house, which was strange to him. He was afterwards insensible four days, and did not recover for a fortnight.

Other forms of Epilepsy.—One will, when walking, stop suddenly, gaze for a few seconds quite vacantly, or turn and look on the ground as if he had lost something.

The French call it *petit mal* when there is a slight convulsive movement of the face or lips and the state of unconsciousness lasts longer. Sometimes these attacks derange the intellect more than full epileptic paroxysms.

Premonitory Symptoms.—Some have warnings at first, and afterwards fits come on without any. These warnings are: headaches, fullness of the head; one notices a most disagreeable odor for a day or two. Others are particularly well, clear-minded. A boy is always particularly mischievous and high-spirited just previous to an attack, and his fingers are drawn into his hands as children affected with crowing convulsions. This turning-in of the thumbs is a common sign of the approach of an attack. Some are always found lying on the face, a night or two previous to it. Some can tell when it is coming, and lie down to keep from falling, or thrust the handkerchief into the mouth to keep the teeth from biting the tongue.

Some try to call to a friend, but can seldom articulate a word; one has convulsive twitching for a night or two previous; some have always a violent pain in the stomach previous to an attack. A lady says she knows an attack is coming on by things "all looking different,"—can't describe *how*, but has often tried. One man could tell by singing in his ears time enough to get off his horse. A young lady has averted a fit by pinching her nose, and can cry out beforehand to "pinch it."

Diagnosis.—The symptoms of epilepsy are exceedingly variable. Sometimes premonitory symptoms are present, like headache, giddiness, ringing in the ears, *aura epileptica*, or prickling sensation extending from the extremities to the head, drawing inwards of the thumbs towards the palms of the hands, and sensation of fullness of the head; but more frequently the subject is struck down without any warning. When the attack comes on, the patient falls suddenly; there are violent, convulsive movements, with loss of consciousness; the face and eyes become distorted; the tongue is often bitten, and in consequence we see blood and froth issue from the mouth; stertorous and difficult

respiration; the muscles of one side are often more agitated than those of the other, and the pulse weak, frequent, and irregular; after the paroxysm has subsided, the patient usually sleeps profoundly for eight or ten hours, and sometimes remains for a considerable period in a feeble and languid state, with headache and occasional delirium; but, more commonly he very speedily recovers his usual state of health and vigor.

Until the time of Sydenham epilepsy was confounded with "St. Vitus' dance," and even at the present day there is not always a well-marked boundary drawn between the different forms of convulsive spasmodic, or other nervous affections. Esquirol and Calmeil have correctly proposed to limit epilepsy to "certain unchangeable characteristic series of symptoms" by which it shall be distinguishable from all other diseases which it may, on a superficial view, be found to resemble.

Calmeil, unwilling to write upon the authority of others, undertook to bring the question of diagnosis to precision by more careful observation than had yet been bestowed upon it. He spent a whole year in the Salpêtrière ward, and spending his nights in that devoted to epileptics. At one time Esquirol had made up his mind that he had so learned the diagnostic symptoms that the best physicians would not be liable to simulate the disease without being immediately detected; and he announced that opinion to his colleagues and pupils. "Just then Calmeil fell suddenly on the floor, and was seized with a most severe epileptic attack. The bystanders endeavored to render assistance, and Esquirol himself lent his aid. 'It is sad,' said he, 'for the poor young man; he is epileptic to a degree which scarcely admits a hope of his being cured.' The words had hardly been spoken when Calmeil jumped suddenly up as well as ever. He turned smiling to his great teacher and said: 'you see, sir, that you have erred; you did not observe that, as I fell to the ground, at the beginning of the attack, my complexion was not altered.'" And thus was this first characteristic sign of epilepsy first pointed out by Calmeil.*

Symptoms of the Attack.—The epileptic, when he falls down, is deadly pale; the congested complexion shows itself not till some moments later.

At the commencement of the attack, *one side of the body* only will be affected with tonic muscular spasms; and when the spasms appear on both sides they are always *more marked in one*.

The muscular spasms are at first always tonic: they are therefore at first stiff and strongly contracted; the thumbs are drawn inwards; the fingers are all contracted; the arm of the affected side makes a

* *Homœopathische Vierteljahrsschrift*, Vol. X., p. 3.

rotatory movement, which may be even so severe as to force the joint out of the socket. The sterno-cleido-mastoid is strongly contracted.

The Aura Epileptica.—This is a peculiar sensation that originates in one of the extremities and passes upward in the course of a nerve to the head. It precedes the fit, and they say they feel it distinctly until it reaches the head, when they are unconscious. Some describe it as a *cold*, others as a *warm* feeling, but always as a creeping sensation, like "pins and needles." Solly says he has seen forty or fifty cases of epilepsy and has met with this but once.

Sir A. Cooper said: the patient would be seized with a pain in the thumb, which extended up the arm in the course of the radial and brachial nerves, through the axilla to the neck and the head; the patient would then drop on the floor in a fit. Shortly afterwards he would get up and appear as well as before. The surgeon cut down upon the radial nerve, by the side of the flexor carpi radialis longus, exposed about one inch of the nerve and removed five eighths of it. After this the pain left the patient and he returned home completely cured. Sauvages thinks this sensation has its origin in the brain, though felt in the limb, just as a man who has had a limb amputated still thinks he feels his toes.

Epilepsy may occur at any age. Though not common in infancy nor in extreme old age. One man of eighty was attacked and recovered, after which he lived to more than ninety in good health. It occurs among animals, as the dog, cow, horse, pig. It is common and well marked in young puppies.

Forms of Epilepsy. A. *Idiopathic Epilepsy.*—Three varieties, (according to M. Esquirol.) 1. Idiopathic epilepsy produced by external causes; forcible compression on the cranium; contusions, fractures; coup de soleil.

2. Idiopathic epilepsy depending on defective organization of the cranium, or lesion of the meninges of the brain, or serous or sanguineous extravasation into the cavity of the skull.

3. Idiopathic epilepsy, nervous, produced by moral affection either of the mother, the nurse, or the patient.

B. *Symptomatic Epilepsy.*—Five varieties. 1. Connected with the digestive organs; indigestible matter in alimentary canal; intestinal worms. In one case it was brought on, in a person who had been free for a year, by eating a supper of cheese and radishes. These are merely exciting causes, acting on an irritable brain.

2d. Form.—Derangements in the arterial system, from suspension of the menses, hemorrhoids, habitual hemorrhages, abuse of stimulants, wrong modes of living.

3d Form.—This has its seat in the white vessels. Pale, chlorotic,

rachitic and scrofulous persons are predisposed to it. Retrocession of porrigo, itch, ulcers, syphilis gout, are common exciting causes.

4th. Has its seat in the organs of reproduction. Excited by venereal excesses: masturbation, pregnancy, delivery, are the common proximate or exciting causes.

5th. *Epilepsy Sympathetica* has its seat in the external organs; it may be excited by any irritation of the external parts of which the secondary effects radiate towards the brain, produce this variety.

Characteristic Symptoms of True Epilepsy.—The patient suddenly falls down, and at first is deadly pale; but after some moments the complexion indicates congestion of the brain and cerebral system generally. The muscles generally are affected by strong tonic spasms; they become stiff and strongly contracted, always more marked on one side, and most frequently seen on one side only. The fingers and all the muscles of the arm of the affected side are rigidly contracted, and the head of the humerus is sometimes wrenched from its socket. The sterno-cleido-mastoid muscle is rigidly contracted, drawing the head downward and the face toward the opposite side. The facial muscles of the affected side are horribly convulsed, and the features assume an idiotic or ape-like appearance,—eyelids close shut, eye-ball distorted upward, the jaws forcibly pressed together, and the tongue bitten through when it happens to intervene. The convulsions of the muscles of the chest suspend respiration, the action of the heart and arteries becomes imperceptible, the bladder and muscles of the pelvis are spasmodically contracted, urine and stools are passed involuntarily; short, strong tonic contractions of the muscles generally.

When the deadly paleness and contractions of the muscles have continued from fifteen seconds to one minute the contractions begin to decline, and the visage becomes red, varying to blue-red; the veins of the neck are swollen to thick cords; the beating of the heart becomes strong and quick, the pulse becomes full and hard, the muscles are alternately contracted and again relaxed, and the face and limbs move convulsively. These clonic movements become rapidly stronger, twitching, with lightning-like quickness in the face, and becoming more and more rapid and severe. The nostrils, lips and cheeks now heave and sink alternately; extraordinary grimaces are exhibited on the features, and the head, trunk, chest and legs are thrown from one side to the other. Respiratory action is gradually restored, a foamy saliva is forced from the mouth, often tinged with blood from the wounded tongue. At this time, and usually at the commencement of the attack, the sensibility is suspended. Neither the loudest noise, a candle held close before the eyes, Ammonia applied to the nostril, nor falls against the wall or pavement, arouse the patient to the slightest degree of consciousness.

After one-and-a-half or two minutes, the redness of the face, clonic contractions, and convulsive movements cease; regular respiration returns, with deep sighs or some inarticulate moanings. A profound sleep ensues, with snoring like that of intoxication; the action of the heart becomes more regular, the veins of the neck subside to their natural appearance, the face is again pale, and the features express nothing but stupor, which lasts six or eight minutes. At last he opens his eyes, looks anxiously around him, is quite puzzled to know what has befallen him, and appears quite ashamed. Headache remains many hours or days; irritability and unfitness for labor, &c., remain. Ecchymoses are observed on different parts of the body where he has bruised himself, and injuries of the tongue, if it has happened to get between the teeth.

In many cases the fit ends with hallucination, delirium, or raging madness. Thus we observe:

1. A cry, falling down, paleness of the face, tonic convulsions, a quarter to one minute.

2. Redness of the face, convulsions, insensibility, one-and-a-half to two minutes.

3. Stupefaction, with cessation of convulsions, three to eight minutes.

Thus the epileptic seizure lasts from five to ten minutes, the return to sensibility and the premonitory symptoms not included.

Epileptic seizures come on with premonitory symptoms of different kinds. Those which appear a few moments before the attack have been called the *near premonitions*; those which present themselves several hours or days before the attack, the *distant premonitions*.

Symptoms of the Stage intermediate between the Paroxysms.—Intercalary Symptoms.—The three phases, or periods, happening in regular successive order constitute an epileptic seizure. The periods may be longer or shorter, but *all three must exist*, or the disease is no epilepsy.

Every attack that begins with loss of consciousness, insensibility, and exhibiting some involuntary movements is not epilepsy. In many shapes these affections appear, and they are by many denominated, though incorrectly, *epileptic vertigo*.

Nervous Affections, usually but improperly styled Epileptic.—1. A patient suffers from attacks of palpitation of the heart. He is pale, has a sensation as if he should fall down, or should die. This is not a nervous heart disease, nor yet an epileptic vertigo; but a peculiar disease, differing from both.

2. A patient, whilst walking, suddenly stops; the head falls to one side; the visage is distorted and takes the expression of terror or fury; one side of the body is stiff; respiration ceases; the countenance is red. Suddenly all this goes off—all the symptoms go off;

the patient complains only of a slight headache. This is not epilepsy, or epileptic vertigo, but a peculiar disease.

3. Another suffers from involuntary chewing movements, which continue some seconds, then suddenly is heard a noise in the throat, as is produced by involuntary swallowing, or as if by empty swallowing. This has nothing to do with epilepsy.

4. One suddenly loses consciousness, for some seconds talks quite astray, to the astonishment of all about him; or repeats the same word ten or twenty times in succession; or he is often seized during the day with attacks of hiccough, during which the complexion changes, and headache, weariness and irritability succeed. All this is perfectly distinct from epilepsy.

These different affections, though none of them be really of an epileptic character, may sometimes exist in persons who *may become epileptic*. The two diseases may then co-exist, or one of them may cease, leaving the other to continue. True epilepsy may originate in old age, as it did in the case of the Duke of Wellington, at the 70th year. It may be suddenly excited at any age, and may cease as suddenly, independent of any treatment.

Constitutional Predispositions.—1. Hereditary transmission; through which relatives, in connection with other analogies of temperament and organic peculiarities.

2. Coincident diathesis. Strumous; psoric; syphilitic; sycotic; arthritic.

3. Attractions in the fluids; plethoric, anaemic, albuminuric, melanæmic, glycosuric? Malarial, by animal poisons, by vegetable poisons, by mineral poisons.

4. State of the surface: hyperæsthesia, partial or general; special sensibility, to temperature, to electricity, to water; transpiration normal, or otherwise; distribution of heat and its peripheric radiation.

5. State of the viscera; especially the digestive sphere; existence of hepatic or renal calculi; tænia solium; lesions of the ovaries or testicles.

6. Peripheric lesions as points of morbid radiation: old cicatrices, entanglement of a nerve; existence of foreign bodies under the skin or within the deeper tissues; irritations of the special senses. Visual, auditory, *dental*.

The patient who is recovering from more severe attacks of epileptiform convulsions, on opening the eyes, looks anxiously around him, unconscious of what has befallen him, and feels timid or ashamed. He has headache for some hours or days, and is irritable and unfit for labor; ecchymoses appear where he has bruised himself, and he finds the wounded tongue sore and bleeding, leaving scars which are sometimes referred to as evidence of the existence of the disease (*Chomel.*) In

some cases the fit ends with delirium, hallucination or raging mania. Thus the deeply-marked outlines of the attack are expressed in, first, a cry, falling down, paleness of the face, tonic convulsions, from a quarter to one minute; second, redness of the face, convulsions, insensibility for one and a half or two minutes; third, stupefaction, with cessation of convulsions, three to eight minutes.

II. Convulsive Affections Occurring During Sleep.—Convulsive affections are peculiarly liable to occur during sleep. This is attributed to the suspension of voluntary power, inducing a peculiar susceptibility in the nervous centres, to be acted on emotionally, or by purely reflex stimulation. Many of the spasmodic movements that occur during sleep, are to be attributed to the emotional state induced by unpleasant dreams, uncontrollable by the power of the will. In illustration of this, the following case is given :* “A woman was affected with an almost perpetual tremor of the right arm and hand, which was always aggravated by emotion. I carefully noted that the arm and hand were completely still during perfectly sound sleep; but in imperfect or light repose, there was a varying amount of tremor. The hand no less in sleep than in watchfulness, became a delicate index of the condition of the mind.” When the sleep was profound, not a muscle quivered; when the sleep was disturbed by dreams, the hand and arm, influenced by the varying emotions, shook very forcibly. When partially aroused, the tremors were renewed; and on relapsing gradually into complete unconsciousness, the voluntary muscles of the arm participated in the perfect tranquility of the general system.

When the activity of the will is suspended, there is a vastly increased tendency to involuntary action of all kinds, “so that it is only after we have removed or paralyzed the seat of volition, that we can obtain experimental evidence of the independent reflex activity of the lower part of the nervous centres, whose ordinary operations are entirely under its control.” This principle is illustrated by numerous instances of various states of sleep, hibernation, paralysis, and by the condition of the fetus *in utero*. Even in the waking state, as in profound reverie, the withdrawal of the will leaves the same susceptibility. It is believed that this principle furnishes the key to the explanation of the reflex or *excito-motor* action, in which sensation is not a necessary link; and also of those actions which become automatic by habit, though guided by sensations, and of those, further, which are the expression of *ideas* suggested to the mind without any emotional excitement.

Pathology.—The pathology is unsettled. It is regarded as a disease of the brain; Marshall Hall refers it to the spinal cord. It appears in two distinct forms:

* Mr. Barlow, of Westminster Hospital, Medico-Chir. Transactions, 1851.

1. Centric Epilepsy.**2. Centripetal Epilepsy.**

It may be induced by any disease within the brain or spinal marrow. It may originate from fright or sudden mental emotion, ending in convulsions repeated. The true spinal marrow induces, when stimulated, convulsive movements in the organs appropriated to digestion, to gestation, and in the limbs.

Diseases within the cranium, by irritating the excitor nerves, or the medulla oblongata, induce convulsions or epilepsy, too frequently, indeed, of the incurable kind. Disease within the spinal marrow may prove a source of convulsions, or still more immediately, epilepsy, equally incurable.

Centripetal epilepsy takes its origin in the excitor nerves of the true spinal system, involving the axis of this system and its motor nerves in their turn; functionally, not organically. This may be considered *curable*, however difficult of cure.

By avoiding the exciting causes, the attacks may be avoided, and the susceptibility to returns subsides; these returns become less frequent and less severe, till they cease altogether.

Dr. Wood thus gives his views of it:

"The disease probably consists in a morbid excitability of the brain, and each paroxysm in a morbid excitement or irritation. A prominent effect of irritation, when beyond a certain point, is first to derange, and, if it be still further increased, to abolish function, this law is applicable as well to the brain as to other organs. The irritation which occasions the paroxysm is sufficient to suspend all the cerebral functions connected with the mind—sensation, perception, intellectual action, emotion, consciousness, volition; but in relation to the motor function, is only sufficient to derange, not abolish it. In this respect, epilepsy differs from apoplexy. In the latter affection, not only are all the mental functions suspended, but to a great extent of motion also. The difference may be owing to a less degree of the irritant or disturbing force in epilepsy, or to its more especial direction to the cortical substance, whereby the mental functions which are probably connected with the latter, may suffer most while the motor functions, connected essentially with the medullary substance, being as it were in the outskirts of the irritant influence, feel only enough of it to be excited into a morbid increase of action, and not enough to overwhelm it entirely."

Theory of Epilepsy.—The first morbid action is a sudden determination of the blood to the brain, which expends itself on the secretion of that nervous power which in a state of health, is employed by the brain to convey volition to the muscles, and which power is, without doubt, analogous to electricity. This excessive secretion is carried

off by the motor nerves, like a discharge from an electric battery, and from its quantity and excess produces excessive action of the muscles. It is another illustration of the law that *the first effect of arterial excitement in every secretory organ, is to excite to an unnatural degree the function of that organ.* We know that mental emotion will cause a sudden determination of fluid to other organs, which, according to the nature of the part, will be followed or not by secretion.

Blushing, erection of the penis, are instances of sudden determination of blood to the particular part. The sudden increase of secretion of many glands, as the lachrymal, salivary, prostate, gastric glands, the testicles, and even the kidneys, and the abundant discharge from these glands, often show that the blood from which the secretions were formed, must have circulated more rapidly through the gland than in their ordinary state, or when they were at rest. The periodic attacks of mania in many insane persons, may be regarded in this light.

Alison says, (*Pathology*, p. 554.) "There are hardly any chronic or local diseases in which local determinations and congestions of blood do not occur." He enumerates the principal diseased states in which morbid determinations of blood certainly occur, and in a great measure determine their extent, their intensity, and injurious results. Those various derangements of the functions of the nervous system, headaches, giddiness, transient imperfections of sense or of memory, fits of *epilepsy*, of hysteria, or other spasms, even those of mania in those predisposed to these diseases; some cases of transient paralytic affections, and many of apoplexy, appear to result from simply increased afflux of blood to the brain without rupture of its vessels, disorganization of its texture, or even increased effusion of its serous fluid."

The vessels that are the seat of this morbid action in epilepsy, are thought by these pathologists "to be those of the choroid plexus, and one of the layers of the cortical substance." The choroid plexus is frequently found hypertrophied in the brain of epileptics, assuming an almost fleshy appearance. This hypertrophy would very probably be the effect of repeated action, hyperæmia. This part of the brain is also often the seat of small tumors, generally like hydatids.

The mode by which determinations of blood take place to the head as well as elsewhere.—The middle or muscular coat of the arteries in a state of health contracts with each systole of the ventricles of the heart, just sufficiently to give solidity to the wall of the pipe, so that the force of contraction is not lost on a yielding surface. A much greater force is required to draw water through a leather hose than through a leaden tube. The middle coat contracts just enough to assimilate the artery physically and temporarily to a leaden tube. The arteries with permanent walls, like leaden tubes, would have interfered by their rigidity with the motions of the limb; hence this beautiful

contrivance. When this middle coat does not contract, or only imperfectly contracts, then a force of the heart dilates the tubes, and produces congestion.

It may be supposed then that determination of the blood to the head arises simply from deficient contraction of the muscular coat of the capillaries of the brain, preceded by excitement of the heart's action.

The throb of the carotid arteries cannot arise from *action of the vessels*; it is the action of the *heart* *felt* strongly, and even distinctly, because the tube yields to the impulse of the left ventricle instead of resisting it, like a solid leaden pipe. If the throbbing arose from the *action of the artery* it could not be synchronous with the heart, which it is. It is the same yielding of the coat of the capillaries in an inflamed limb which gives rise to the throbbing sensation which all of us have felt in some small spot or another.

Why do these capillaries of the brain thus suddenly and entirely neglect to perform their duty? There must be some "defective innervation from the *sympathetic nerves*, whose office is held to be the regulation of the coats of the arteries, so as to produce secretions, &c., and, so far, I can see," says Solly, "much probability in the opinion of the Wenzels, that the pituitary gland is in fault in epilepsy,—believing as I do with Dr. Copland, that this gland is the cerebral ganglion of this nervous system." Copland says, (*Dict. Pract. Medicine*, Vol. I., p. 97), in apoplexy "the frequency of change in the pineal and pituitary glands of pultaceous pits—have led me to infer that functional lesion or organic change often commences in that portion of the ganglionic system which supplies the encephalon and its blood-vessels; and that owing to exhaustion of its influence, the capillaries lose their vital tone, have their circulatory functions impaired, become more or less dilated, and are disposed to rupture."

Dr. Burrows has shown that the quantity of blood in the brain may be increased or diminished as it may in any other organ. Dr. Bright says no organ of the body is liable to such violent or frequent changes in the state of the circulation as the brain; in other organs the increased excitement may be in some degree limited, but in the brain it seems to be unlimited, "augmenting with every increase of luxury and civilization."

Congestion of the brain exists in every case of epilepsy, though it is not the cause of the paroxysm. (*Watson*.)

In all cases of fatal epilepsy examined after death, the vessels of the brain and membranes have been found enormously distended.

Causes.—1. The presence of indigestible food in the stomach; 2. morbid matters in the intestines; 3. uterine irritation. Of these

causes of epilepsy, the first acts through the medium of the pneumogastric nerve. The second through the true spinal system.

"Venereal disease often fixes on the dura mater, produces periosteal disease, and may be cured as the disease is cured elsewhere. (*See Syphilis*—p. 308, Vol. II.) Syphilitic inflammation of the fibrous tissue frequently produces deposits and thickening; and more than once," says Solly, "have I seen epileptic fits apparently result from the irritation which this disease causes."

Organic affections of the brain, abnormal osseous deposits within the cranium, ill-formed cranium, diseases of the heart, fractures of the skull, violent mental disturbances, secondary syphilis, mercurial affections, onanism, suppressed eruptions, habitual discharges, and excesses in the use of liquors; immoderate indulgence in sexual intercourse; and the sight of other epileptics may cause epilepsy.

Epilepsy may be congenital, may arise during infancy from dentition and various other causes. It is frequently developed during the period of youth, especially about the age of puberty. It may even originate at a late period of life, in which case it is often caused by intemperance.

2. *Drunkenness*.—A large proportion of the inmates of almshouses pauper establishments, lunatic establishments, and idiot schools have been brought hither by the influence of intoxicating liquors. This is so commonly known that it is unnecessary to present statistics.

3. *Masturbation*.—This terrible vice is often associated with gluttony. The patient often loses all control over his appetite, and ceases to have any control over his mind. On this subject Dr. J. M. Good* says: The sagacity of a debauched life confirmed by habit, can only be cured by a total change of habit, which is a discipline that the established debauchee has rarely the courage to attempt. Exercise, change of place and pursuits, cooling laxatives, and a less stimulant diet than he will be commonly found accustomed to, may assist him in the attempt; but in general the mind is as corrupt as the body, and the case is hopeless. He perseveres, however, at his peril; for with increasing weakness, he will at length sink into all the miserable train of symptoms characterizing that species of marasmus called *tubes dorsalis*."

Though this single vice has caused a large number of the patients in lunatic asylums and idiotic establishments, and is found among patients of every age from infancy to old age (when they live to advanced life,) there is no one cause of any disease which the patients themselves and their friends for them will so promptly deny, and so persistently persevere in their denials. "These cases, so gloomy in

* Study of Medicine and Nosology.

their results, though numerous among the poor and otherwise degraded, are by no means confined to that class. They are often found among the educated, the wealthy, even in professedly christian families."

Prognosis.—Epilepsy which occurs in infancy and childhood, from fright or suppressed eruptions is curable. When the cause is sexual excitement a cure may sometimes be effected by marriage. On the other hand, those cases which proceed from organic affections within the cranium, from long-continued masturbation, and from disease of the heart, more especially if they occur after the age of twenty-five years, or if they have continued for several years, are generally incurable. As a general rule *idopathic* epilepsy is more difficult of cure than the symptomatic.

Sympathetic epilepsy is more easily cured than any other form of the disease; but it is not always curable.

Epilepsy seldom attacks those children that have eruptions on the head. It sometimes disappears for years and then returns without cause assignable.

Those attacked shortly after birth, if they do not "out-grow the disease" on reaching puberty, remain incurable.

Those that begin between the ages of three and four years are often cured if properly and early treated.

Those who become epileptic a little before puberty recover when that change of life is reached; those that become epileptic after puberty are sometimes cured, though Hippocrates thought otherwise.

Genital epilepsy is sometimes cured by marriage, though it is hurtful in other forms of the disease. Pregnant women who become epileptic are exposed to great danger. When the fits occur more and more frequently and become more violent, death may be generally feared. The patient dies during the prostration *after*, not *during* the fit. When epilepsy is complicated with mania it is incurable.

TREATMENT.—Certain general peculiarities have been observed in epileptics: they are generally remarkable for large size and high temperature of the head.

The symptoms are those of a sudden explosion of accumulated nervous energy. From the periodical recurrence of the fits in many cases, it is inferred that the accumulation of nervous energy (*dynamis neurotica*) goes on for a definite time in the brain and spinal cord, till at length an explosion ensues upon the muscles of voluntary motion, which are thrown into violent action, and by these means the accumulation is exhausted. This explosion is followed by languor, and frequently by coma, or prolonged sleep—indubitable signs of exhausted nervous energy.

Two measures have been proposed for preventing the gradual accumulation and sudden explosion of the nervous energy, constituting fits of

epilepsy. 1. By constant exercise of the voluntary muscles. By this means the occurrence of the epileptic fits may in some measure be diverted for a considerable time—the next best thing to cure. This treatment has proved itself the safest and the best, where it has been effectually tried. In proof of which we may adduce the examples of the greatest military commanders that have lived in the world. In all it occurred in the latter period of life, when their most active labors had terminated. Cæsar had epilepsy at Rome, never during his campaigns.

In the case of the Duke of Wellington, the recurrence of the fits was prevented by his temperance of living, by the activity and simplicity of his habits, the hardihood and severity of his amusements. His example is proposed to all epileptics.

Confinement in asylums, without active exercise, is highly injurious to epileptics, as a life of inactivity favors the recurrence of the fits.

The cerebral disease found in some cases after death, is the effect, not the cause, of the disease. It is upon the principle of arousing the dormant nervous energy, and promoting its expenditure, that some of the remedies said to be successful in the cure of epilepsy have operated—that is, by making an impression upon the nervous system, through the medium of the mind, by which the patient is roused to activity and consequent expenditure of nervous energy.

The normal state of respiration is a point of ætiology in this disease requiring careful consideration. Many epileptics have a shallow, contracted, and feebly-acting chest, which predisposes to, and must keep up, the epileptic tendency. In some patients, the respiration is not only deficient in amount, but in number also, being less than one respiration to four pulsations of the heart. This feeble lung-action causes injury to the patient, both by tending to retain carbonic-acid in the blood, (and many symptoms of these cases seem referrible to this,) and by preventing the lungs from acting freely as *diverticula* to the cerebral circulation. Among the functional cerebral derangements are headache and lethargy, which free respiration in the open air will often relieve entirely.

In other cases, respiration may become extremely difficult, as if from sudden deprivation of nervous influence; in such cases fresh air or inhalation of Ether or Ammonia, and deep-forced inspirations, if they can be effected, are often productive of great benefit.

TREATMENT *during the paroxysm*.—When called to a person laboring under an epileptic attack, we should at once loose all of the clothing, in order that the blood may have free circulation to and from the head, as well as in other parts of the body. We should also place a cork or some soft substance between the teeth, to save the tongue and lips

from being wounded by the convulsive movements of the jaws. The patient should be placed in bed, and restrained just sufficiently to prevent him doing himself personal injury, during the convulsions. When the paroxysm is preceded by an *aura*, the attack may sometimes be warded off by tying a ligature firmly just above the part where the *aura* commences.

It is a general impression amongst homeopathic practitioners, that anti-psorics alone are capable of effecting a permanent cure of epilepsy. This is true with regard to those cases which are connected with syphilis, mercurial affections, and impurities of the blood; but when the disease has been caused by injury to the cranium, by mental excitements, by masturbation, or by excesses in liquors or venery, it is apparent that a different course of treatment is requisite.

The most important remedies in the treatment of epilepsy are: *Belladonna*, *Sulphur*, *Mercurius*, *Stramonium*, *Aconite*, *China*, *Ignatia*, *Coffea*, *Phosphorus*, *Arnica*, *Opium*, *Nux-vomica*, *Hyoscyamus*, *Agaricus*, *Ipecacuanha*, *Cicuta*, *Silicea*, *Argentum-nitr.*, *Coccus*, *Cuprum*, *Camphor*.

Belladonna.—Hartmann has found this remedy specific for the following symptoms, viz.: "great irritability of the whole nervous system, so that the patient is startled at the merest trifles; he becomes peevish and sensitive, and is affected by tremors and twitchings in the muscles; restless sleep, which is disturbed by frightful dreams; hypersensitivity of the eyes; sparks and flashes before the eyes; also diplopia and myopia; stammering speech, with congestion of blood to the head, and nervous distension; vertigo, with roaring in the ears; convulsions of particular muscular parts, subsultus, distortion of the face," &c. *Belladonna* will be generally applicable in those cases which have been induced by fright, or other mental emotions.

Sulphur and *Mercurius* are proper when there is reason to suspect a psoric or syphilitic taint as the cause of the malady. These remedies should be persevered in until all trace of the impure taint has been eradicated.

Stramonium, *Ignatia*, *Hyoscyamus*, or *Coffea*, may be administered during an attack. These remedies are appropriate in cases caused by chagrin, fright, or mortification.

Camphor is indicated in epileptic attacks, caused by taking cold, or by vexation—particularly if congestion of the brain is threatened; when caused by fright, *Artemisia*, at the first or second dilution, has been found curative; when occurring in sensitive children, during the period of detention, *Chamomilla*, *Coffea*, and *Hyoscyamus* are the specifics; in the epilepsies of nervous and impressible subjects, with distortion of the limbs and face, blood-shot eyes, foaming at the mouth, livid face, and protracted loss of consciousness, *Cicuta* and ,

monium are our best remedies; epilepsy induced by unusual excitements, worms, exposure to a high degree of heat, and attended with sudden loss of consciousness, and of muscular power, screams, violent convulsive movements of the limbs, gnashing of the teeth, frothing at the mouth, livid face and forehead; blood-shot eyes, and irregular spasmodic twitches in various parts of the body may generally be cured by *Hyoscyamus*, *Ignatia*, and *Cocculus*; *Nux-vomica* is an invaluable remedy when the complaint proceeds from the abuse of stimulants, venereal excitement, sedentary habits, undue mental exertion, disordered stomach, or worms; in the epilepsies of drunkards *Opium* may often succeed *Nux* with advantage; frequently recurring epileptic fits have often been permanently cured by Dr. Dunford with *Argentum-nitr.*, *Belladonna*, *Agaricus*, *Moschus*, and *Silicea*. When the fit arises during the course of an eruptive fever, in consequence of a retrocession of the eruption caused by cold, we may employ *Ipecacuanha*, *Cuprum*, and *Belladonna*.

China and *Phosphorus* should be given in epilepsy which has followed protracted masturbation, or excessive venery. The latter may also be used in cases proceeding from osseous deposits within the cranium.

Opium and *Nux-vomica*.—For the epilepsies of inebriates, these medicines are important, and will often effect permanent cures, after the previous habits of intemperance are corrected.

When the cause consists of an injury to the head, *Arnica* is our chief remedy. This medicine should be used externally as well as internally. If the paroxysms have been caused by fright, grief, chagrin, or from some sympathetic emotion, we may often prevent an attack (homœopathically) by exercising the patient with some more potent mental influence, which shall supersede the action of the original cause. It was upon this principle that Boerhaave cured a number of epileptics at the hospital for orphans at Harlem, who had been attacked in consequence of fright from seeing an epileptic brought into the hospital during a paroxysm. In these instances Boerhaave had a red hot poker ready, in order, as he assured these girls, that he might apply it to their heads as soon as there was any indication of an attack. The fright caused by this *idea* entirely overwhelmed the other cause, and an immediate cure was generally the result.

Administration.—We commonly advise the lower attenuations, and administer the remedy once or twice daily, until a cure is effected.

Chronic Epilepsy.—*Calcarea* has a beneficial action on the nervous system, and is administered with advantage in chronic cases of epilepsy, and in some cerebral affections, in alternation with or after *Belladonna*, *Silicea* and *Cuprum*. *Calcarea* resembles *Silicea*, and in a less degree *Sulphur*, in its beneficial action in muscular weakness, and

in rickets; also in nervous debility, such as is attendant on spinal irritation. (*Dr. Black.*)

Cuprum.—Case by Dr. Kissel. A young man aged twenty-one, choleric temperament and strong constitution, had, since his fifteenth year, suffered from epileptic spasms, which returned at intervals of four or five weeks. In Nov., 1823, a fit came on with severe hæmorrhage from the lungs. Bleeding and antiphlogistic treatment was resorted to, but this resulted in a fit within three weeks which surpassed all former ones in severity. No cause of the illness was discovered, and the parents ascribed it to the patient's passionate disposition. Prescribed Cuprum-sulphurico-ammoniatum one-half grain twice a day. The next fit, which came at the end of five weeks, was milder. Those which succeeded came at longer intervals; and after the fifth they came no more. Two years later he was heard from as having no subsequent return. He had taken only sixteen grains of the remedy.

Case by Urban. A woman aged thirty-six, had from childhood enjoyed almost constant good health up to Feb., 1825, when she was shocked by the sudden announcement of her husband's death, and was immediately attacked by epileptic convulsions. During the first days, the fits recurred almost every hour. Afterwards they came on five or six times a day. After the removal of gastric symptoms they remained unaltered. Cuprum-sulphurico-ammoniatum was given, half a grain twice a day. This dose was too large and produced vomiting, and the attacks grew more violent, after six powders had been taken. They were omitted for one day, and then resumed. It was soon seen that though the intervals between the fits continued the same, their severity was diminished, and their duration shorter. Nausea and vomiting returned, but only in a slight degree. The medicine was continued, and it was evident that the intensity of the disease was abated. The dose was increased to a grain of the salt of copper twice a day. By the time the patient had finished twenty-six grains, the disease had disappeared without leaving a trace behind, and did not show itself again.

Cuprum-metallicum.—Violent convulsions from dentition; whole head bloated; face red and swelled; the child utters crowing screams; the attack is preceded by loathing of food; nausea, lethargic state; a quantity of phlegm is forced up; when consciousness returns, the child writhes, screams, the abdomen is distended; the involuntary discharge of thin stool; occasional convulsive movements and distortion of the limbs; these symptoms are followed by new paroxysms during which the child is without consciousness.

Hahnemann says, convulsions are caused by the administration of copper. And Tondi, Ramsay, Fabas, Pyl and Cosmier, saw convulsions from the use of aliments impregnated with copper. J. Lazerne saw reiterated attacks of epilepsy from the accidental introduction

of a copper coin into the stomach; and Pfündel saw similar attacks produced by the ingestion of a compound of sal-ammoniac and copper. These cases sufficiently show how copper has been able to cure chorea as reported by Willan, Walcker, Theussink, and Delarive; and why preparations of copper have so frequently cured epilepsy, as attested by Batty, Baumes, Bierling, Boerhaave, Causland, Cullan, Duncan, Feuerstein, Heyetias and many others.—(*Hahnemann. Organon. Introduct.*)

Agaricus.—Dr. Leopold says: "The cases suitable to it are very common during dentition; after the febrile excitement, sometimes of only short duration, coma supervenes; the eyes are half open, showing the white; breathing not very hurried, but often a deep inspiration followed by a sigh, and slight convulsive twitchings of the extremities; he formerly saw these cases fatal from severe convulsions; he now gives five or eight drops of the tincture in half ounce vial with water, every hour or two a ten-spoonful. He recently took two cases from allopaths, and restored them so quickly to health that the parents were very much astonished. When the hands, feet and head, are still hot, give Bell. in alternation with Agaricus."

In the case of a boy, aged fourteen, with rheumatism, there was metastasis to the heart; and, in the third week, cramps in the hands and feet. After two or three attacks through the whole body, as if the poles of a galvanic battery were touching his spine, he would present his foot or hand from under the bed clothes, drawn and pointing in a shocking manner; right side oftener affected than the left; Colch. Veratr. Nux-v. failed, also Secale-cor. Capsic. On the fourth day scarcely three to five minutes free from the cramps on both hands, or both feet, or in the face. He could sleep for five hours during the night, (never in the day,) without moving; but as soon as he opened his eyes, the cramps came afresh.

Agaricus in two drop doses, at short and then in longer intervals, immediately wrought a change for the better. The cramps came only four times in the second day, and ceased entirely on the third. A relapse, after some weeks from wet feet, was speedily cured by the same remedy.

Dr. Leopold says: "A boy was epileptic for nine years; latterly the fits came on every day in the afternoon, though they were lighter than before. Agaricus was given morning and evening for one week. In four weeks he was quite well. He then had one relapse, for which he took it again.

Stramonium in a large dose dilates the pupils very much, causes vertigo, delirium tremens, retching, excessive thirst, mania and convulsions. The mania is most singular. It is characterized by antic gestures, screaming, laughing, crying, continual distortion of the face;

before death there is deep coma. It was introduced into practice by Baron Stoerck, in 1762. Dr. W. P. Barton, of Philadelphia, gave to a maniac two grains of the powdered root at a dose, and continued in increasing quantities till "the patient broke out all over his legs and various parts of his body in boils, and he was discharged cured. Dr. Eberle says he gave this remedy in a case of hysterical mania which he had treated without benefit for three weeks. On the third day the maniacal symptoms subsided, and in a few days was entirely cured.

Cases of Poisoning by Stramonium.—A boy, aged four years, in previous good health, took some seeds of Stramonium, and was found in a most wild, frantic and convulsed condition; the pulse was rapid, the skin hot, the face flushed, the pupils much dilated; there was wild delirium, and every muscle was convulsed. It has often been given in epilepsy in young persons, returning at regular periods, the dose to be regulated by the dilatation of the pupil. In full doses it lessens sensibility and pain, occasions a nervous shock, attended momentarily with affection of the head and eyes; some nausea and symptoms of intoxication; nervous sensations referred to the oesophagus, bronchia, or fauces; relaxing rather than astringent effect on the bowels; little effect on the pulse; dilatation of the pupil; induces sleep, chiefly by the tranquilizing effect on the pain. A robust man in severe suffering from inflammatory rheumatism, took several grain doses of the watery extract. Some delirium followed, pulse continued at 120 per minute; no sleep except for a few moments; pupils dilated; mouth, previously ptyalized, becomes very dry, stops running. He sits up all the time, talks incessantly, and says: "that remedy ought to be given to nobody but mad-dogs." Tetanus, with complete rigidity of the whole body, or of the extremities, alternating with convulsive shocks; the patient lies in a deep sleep, with stertorous breathing; a quantity of urine is emitted. These symptoms are generally accompanied with great heat over the whole body; thirst; the tongue dry; the features distorted, as if from pain; the face is red, as if bloated; the tongue seems paralyzed; deglutition difficult; eclampsia, with hyperæmia.

Hyoscyamus.—Eclampsia from sudden fright. There is hyperæmic condition of the brain; congestion of the brain, characterized by unusual redness and bloatedness of the face; the child makes much noise in drawing the breath through the viscid fluids accumulating in the mouth. The abdominal muscles are spasmodically contracted; convulsive movements of the body, affecting one part and then another wakefulness; involuntary emission of urine.

Arsenicum.—Burning heat of the whole body; child constantly licking its dry and parched lips; the twitching of a single limb during sleep is a characteristic indication for Arsenic, and frequently precedes the convulsions. A dose of Arsenic frequently prevents the convul-

in all exhausting nervous diseases, in which there is a wasting of Phosphorus in the brain-matter. All the nutritious cereal grains contain it. Phosphate of Zinc has been found useful in the convalescing stage of fevers which induce the greatest wasting of tissue, and of brain matter to such extent as to cause insanity.

An epileptic woman took, in conjunction with other things which should have been left out, Phosphate of Zinc. In a fortnight the spasms were lessened; and in three months she was free from them. It was also successful in insanity from exhaustion of lactation. It restored physical and mental health in three months. (*Lancet*, Jan. 1858, p. 119.)

Sulphate of Zinc.—1. This cured epilepsy caused by intoxicating liquors and accompanied with diarrhoea for six months.

2. It cured a case in a man in whom epilepsy came on with frequent fainting fits, such as in either sex are premonitory of epilepsy. The intellect was weakened, and he was becoming idiotic. He was cured physically and mentally by this remedy, and has since served in the army of India.

Digitalis has cured some cases after other remedies had failed. It is adapted to young and excitable subjects. It was suggested by Dr. James Johnson; also by Dr. Corrigan (*Med. Gaz.*, Vol. XXXVI. p. 1473.) It was long a quack remedy in Ireland; and "in over-doses its effects were terrific." It is proposed to saturate the nervous system, not inducing the alarming effects; but to persist in its use till sickness of the stomach and dilated pupils give warning that the maximum dose has been reached. It is a dangerous remedy, and is only safe when it soothes the nerves and passes off through the kidneys. When it does thus pass off it is liable to accumulate; when used, the pulse must be watched, counting it by the watch every quarter of a minute.

Oxide of Silver.—This remedy has succeeded in some cases; in full doses, long-continued, it has tinged the skin below the eyes, and formed a dark line on the edge of the gums.

Oleum-terebinthinae.—Watson (*Lectures*, p. 427,) refers to cases of epilepsy caused by tape-worm, cured by expelling the tape-worm with turpentine. An Englishman who took it, recovered from epilepsy; after taking turpentine he was intoxicated. It destroyed a tape-worm, and he was cured. Lord Hardwick, of England, had epilepsy from tape-worm, and was cured in the same manner. The cases illustrate the eccentric form of epilepsy; and show that irritation of the stomach or intestines may be sufficient to cause a fit.

Camphor.—This remedy will sometimes arrest or palliate epilepsy by merely smelling it when the approach of a paroxysm is perceived.

Remedies most Serviceable in Recent Cases.—Ignatia, Bell., Chas Nux-v., Opium, Ipecac., Camphor, Hyoscyamus.

In Chronic Cases of Long Standing.—Sulphur, Calcarea-carbon., Silicea, Causticum, Bell., Cuprum-metallicum, Hyos., Stram., Veratr., Lachesis.

When the disease has arisen on repercuSSION of an old eruption or chronic discharge, Sulph., Caust., Calc.-carb., Stram., Laches.

GENUS VIII.—ASPHYXIA.—APNCEA.

This name was used by Hippocrates, and refers primarily to suspension of the heart's action (from *a*, without $\delta\phi\nu\xi\alpha$, to beat or leap.) But it is applied to a state of suspended animation, produced by arrest of the actions of respiration, which is soon followed by the cessation of the motions of the heart and other vital functions.

GENERAL REMARKS.—Asphyxia, when it arises from causes which operate slowly, begins with difficulty of elevating the thorax; anxiety; quick and short efforts to fill the lungs with air; gaping and stretching; vertigo; loss of consciousness and sensation; sometimes convulsive movements of the limbs and trunk; immobility of the muscles of the thorax, and abdominal muscles; weak and languid pulsation of the heart, absence of pulse at the wrist; face livid, tumid, injected, its veins distended; reddish violet hue of the hands, feet, and face; similar patches on other parts. On the final cessation of the circulation, asphyxia is complete, but animal heat and the absence of rigidity of the muscles remain longer than after death from other causes. These symptoms succeed each other with more or less rapidity according to the causes by which they are produced, and the more or less perfect exclusion of the air from the lungs. The duration of life is proportioned to the rapidity with which these causes operate; "as the more slowly the state of asphyxia supervenes the longer the person retains the ability of being reanimated."

Causes of Asphyxia.—Whatever cause may prevent the renewal of air in the lungs of a healthy person. Deficient expansion of the lungs from mechanical obstructions, external pressure on the chest; from injury of the pneumogastric nerve; from injury of the medulla oblongata, fracture, or dislocation of the spine in the cervical portion; paralysis of the nerves of respiration, or deficient irritability of the inspiratory muscles as from the numbing influence of cold; and the suspended animation of new-born infants.

The air may be prevented from entering the lungs by mechanical causes; as strangulation; submersion; foreign bodies in the air-passages. The air itself may be vitiated by the presence of deleterious gases; several causes of asphyxia are often in operation at the same time.

PATHOLOGY.—The body after death exhibits a violet or reddish hue

of the countenance, and of other parts of the surface; warmth and flexibility retained long after death; the blood of the skin or vascular tissue exhibits unusual fluidity; eyes bright and prominent; mouth generally natural, sometimes distorted; veins and sinuses of the brain generally filled with dark fluid, or semi-fluid blood; brain otherwise natural; base of the tongue injected, tumeified, and papilla developed; mucous membrane of all the air-passages injected and red, becoming darker as we descend into the lungs; lungs distended; brown or blackish in color; parenchyma when cut and pressed gives out large drops of black blood; liver, spleen, and kidneys engorged with blood; veins of the heart, its right cavities, *venæ cavae*, and other large veins engorged with black blood. (*Copland Dict. Pract. Med.* I., 170.)

1. *Asphyxia from Submersion.*—The first effects felt by a drowning person are an urgent feeling of anxiety in the chest; the pulse becomes weak and frequent; he struggles, rises toward the surface, the pulse becomes weaker, he again rises and perhaps throws out air from the lungs; in his efforts to inspire air is drawn in, and it excites cough and spasm of the glottis; as the respiration becomes less perfect the blood partakes more and more of the venous properties; it becomes narcotic and poisonous, as well as increased in bulk, thus pressing on the brain it occasions insensibility, loss of voluntary motion; the surface of the body assumes a livid color, the pulse ceases to beat, the sphincters are relaxed, and the body sinks to the bottom.

Appearances on Dissection.—Dilated pupils; clenched jaws; semi-contracted fingers and thumbs; paleness of the face at first, followed by livid appearance of the skin; striking calmness and placidity of features; the point of the tongue is usually found in contact with the incisor teeth; in some cases froth is found about the mouth, sometimes within it, and, more rarely in the trachea; a peculiar liquidity of the blood is frequent, water is found in the stomach in nearly all cases of persons drowned, but not in those thrown into the water after death. (*Augustine, Edin. Med. & Surg. Jour.*, 1837.)

Orfila says the lungs become of indigo color, and brownish after exposure to air; the right cavities of the heart, the pulmonary veins and arteries and veins are filled with black blood, and retaining less contractile power than those of the left side; the color of the viscera is the same as after death from asphyxia otherwise produced. (*Report to Royal Acad., Paris.*)

PROGNOSIS.—The period after which reanimation may be procured varies from five minutes to three quarters of an hour. (*Copland.*) In one case, mentioned by Dr. Lee, resuscitation was effected after submersion for forty-five minutes. In ordinary cases restoration cannot be hoped for after submersion of over ten or fifteen minutes.

2. *From the poisonous effects of the vapors of burning oil*

In cases of suffocation from breathing the vapors of burning charcoal, death generally results from the poisonous action of carbonic-acid-gas, though in some instances some unknown noxious vapor is developed in the process of combustion.

First Degree of Asphyxia.—Symptoms.—The symptoms produced by carbonic-acid-gas are well marked, but not entirely characteristic, as they in some points resemble the effects of apoplexy. The person exposed experiences an intense throbbing headache, with weight and heat, especially about the occiput; strong pulsations, and sense of tightness across the temples; vertigo; increased action of the heart; and, often violent palpitations; confusion of ideas; partial failure of memory; nausea; hysterical sobbing.

Treatment.—Remove instantly from the vitiated atmosphere: place in a current of cool air in a recumbent position; apply bottles of hot water to the feet, if cold; cold water to the head. The symptoms pass off in a few hours.

Second Degree of Asphyxia from Poisonous Vapors.—Exposure to the vapors of burning charcoal when continued for a longer period produces: Buzzing noise in the ears; partial or total loss of vision; an undefined feeling of dread or horror, followed by an irresistible disposition to sleep, or fainting. In a short time all power of volition is lost. The pulse and heart, which recently beat rapidly, (sometimes from 100 to 200 per minute,) fall to 40 or 50; the breathing becoming more slow and laborious; surface cold and livid; lips blue or violet, the eyes still retaining their lustre. As the symptoms increase in violence there are tetanic convulsions, and raging delirium; white or bloody foam from the mouth and nose, followed by vomiting and death. In some cases the tongue is clenched firmly between the teeth, producing suffocation.

Pathology.—After death, “the countenance,” says Dr. Golding Bird, retains the expression of placid calmness, resembling sleep, “the body sprinkled with livid, bluish, or reddish-brown spots; limbs flexed, or rigid fingers, often irregularly bent or stiff; arms extended or thrown across the chest,” after tetanic spasms; animal heat generally greater than after death from other causes; in some cases the putrefaction is also said to be more rapid; the tongue clenched between the teeth, (except after vomiting,) mouth covered with white or bloody foam; face livid and bloated, or pale; eyes lustrous, sometimes injected; pupils generally dilated; the whole appearance that of calm repose without any distortion; interior of the nostrils lined with a black, smoky deposit; the abdomen generally distended with air. (*Louisville Medical Journal*, Sept. 1840, p. 217.)

3. Asphyxia from Strangulation.—The first effect of the tightening of the cord around the neck is the suspension of respiration and

the engorgement of the brain with blood, on the occurrence of which sensibility begins to decrease; epileptic convulsions, more or less marked; "turgidity, suffusion and lividity of the face, shoulders, chest, arms, and hands; the eyes are open, the features distorted, tongue thrust out of the mouth; external muscles of respiration firmly contracted, hands clenched, sphincters relaxed. When the air is not perfectly excluded the sufferings are prolonged; engorgement of the head and face greater, brain more congested, lungs less so." In nearly all cases of death by strangulation, life is suspended by the cessation of the action of respiration, though the engorgement of the brain shortens the process and lessens the suffering, which, however is very great for a short time; dislocation of the cervical vertebra is common in public executions, though rare in suicides. The action of the heart becomes more rapid as the death-struggle progresses, and remains a few minutes after the breathing ceases. In one case it rose from under 100 per minute to 120 three minutes after respiration was suspended, then to 155, and five minutes afterward was imperceptible. The air in the lungs extracted from the trachea was without oxygen, though the breath before the execution contained 17.84 parts oxygen in 100. Carbonic-acid gas increased from 2.609 before, to 7.7 after execution; and nitrogen increased from 79.551, to 92.3.

On the cause of the extinction of life in Asphyxia.—Dr. Paton of Canadu, concludes from a series of well-conducted experiments: "That the time required to produce asphyxia in an animal varies according to its physiological condition, and the rapidity with which the function of respiration is effected, and that the power which a cold-blooded animal possesses of resisting the deprivation of oxygen depends on the state of its system at the moment. For during the warmest period of the season, when the functions of the body are carried on with the greatest energy, if respiration be simultaneously arrested in the skin and the lungs of a cold-blooded animal, it will die almost as soon as a warm blooded one; so powerful is the effect, that it seems to act almost like concussion of the brain. Insensibility is produced, and at the same time, the action of the heart is depressed.

"What is the immediate cause of the insensibility that is thus produced? It does not arise from the deficient supply of blood to the heart and the brain, for the heart continues to beat, and dark venous blood to circulate through the arterial system long after the animal has become insensible; and if the non-aerated blood had been finally arrested in the capillaries of the lungs or the skin,—the seat of the respiratory process in cold-blooded animals—or so arrested that it could not be sent forward to the heart in sufficient quantity to maintain the circulation, these phenomena could not have been witnessed. But we have seen from experiment VI. that at the time asphyxia was in-

dness, the heart continued to beat at forty pulsations per minute, and in another experiment the dark venous blood passed along the arch of the aorta when the pulsations of the heart were only thirty per minute, the animal remaining in a state of deep insensibility. Whereas, if an animal die from another cause—when the function of respiration is not affected, the pulsations of the heart may be reduced to ten or twelve per minute, and yet we have distinct evidence of sensation on irritation applied to the integuments. From these facts it appears, that it is not from the deficient action of the heart or diminished supply of blood to the brain, that insensibility, the first stage of asphyxia is produced."

In other experiments it was seen, that "in resuscitating an animal from asphyxia, the action of the heart may increase, and the circulation of dark venous blood be maintained with considerable vigor, but insensibility is not recovered from till there is a greater influx of arterial blood to the brain. In experiment 1, the pulsations of the heart rose as high as forty-two per minute, and remained at that rate for a considerable time: but it was only after the respirations became more frequent and a greater amount of oxygen was consumed, rendering the blood more highly arterialized, that the first signs of returning sensibility were witnessed—a fact which seems to prove that in asphyxia insensibility is produced by the action of dark venous blood on the brain."

"What is the immediate cause of death in asphyxia, or on what does the failure of the circulation depend?"

The experiments show that "shortly before the action of the ventricle ceases, the blood begins to accumulate in the large veins around the heart: and after the circulation has been finally arrested, both the auricles, the vena cavae and pulmonary veins remain gorged with dark venous blood, whilst the aorta is comparatively empty, indicating that there is no longer any communication between the general circulation and the lungs. For if the blood had been arrested in the capillaries of the lungs, we should expect to find at the heart the pulmonary veins and the left auricle nearly desanguinated, but the reverse is the case. And, on the same principle, the circulation of the cutaneous capillaries had been equally stopped, neither the right auricle nor the vena cavae would have been filled with blood. Whatever then may be the effect which the want of oxygen exerts on the function of respiration, dark blood must circulate till it is ultimately arrested at the heart; and the phenomena presented to our view seem to indicate that the circulation depends on the ventricle ceasing to contract and transmit the blood forwards."

"In consequence of the cessation of the movement of the heart, the dark venous blood circulates through the body, the

action of the heart rapidly falls in strength and frequency till the movements are arrested." We know that venous blood has less influence than arterial blood in stimulating the heart to contraction, but the venous blood "exerts a positively noxious influence upon the heart, and impairs its irritability; and this influence must be greater when the blood is more deteriorated in quality." Dr. Cartwright states that "the heart of an alligator loses its power of contractility much sooner under the influence of impure venous blood than when it is altogether deprived of blood as a stimulus." "The heart always lives longer than sensational phenomena continue. It will throb with force for hours on the slightest touch after it has been cut out of the body. If left in the body it will continue to pulsate for several hours at the rate of some three or four beats in the minute, instead of twenty-five or thirty; but its action ceases in about an hour, if the animal has been killed by suffocation." These facts prove that the circulation of dark venous blood exerts a most depressing influence on the action of the heart, and gradually arrests its movements.

The phenomena of asphyxia do not then depend on accumulation of carbonic-acid in the lungs; as it has been proved by experiment, that if a frog be compelled to breathe in hydrogen or in nitrogen, carbonic-acid is exhaled in no less degree than during respiration in atmospheric air, and yet the animal equally falls into asphyxia, rendering it certain that it is not the retention of carbonic-acid in the blood, but the want of oxygen from the blood, as a stimulus to the different parts of the body on which asphyxia depends."

TREATMENT OF ASPHYXIA.—*Resuscitation of Drowned Persons.*—In 1794, Dr. Fothergill, in his "New Inquiry into the suspension of Vital Action in cases of Drowning, &c.," originated the doctrine which led physicians to seek for some mode of imitating the respiratory movements in cases of suspended animation from drowning. He taught, indeed, that "the first grand indication should be to renew the action of the lungs; but practitioners found it more easy to tell what was wanted than to put in operation any practicable mode of reaching it. Mr. R. Hamilton in his "Rules for Recovering Persons recently Drowned," says: "On taking up the body, we are not to wait for an increase of heat before we begin our operations. We are to commence them by expanding the lungs *immediately*. This is not only the first, but most important part of the process." He also recommended the very cautious and moderate application of heat, viz.: 60° or 70° Fahr., but said, "it cannot supply the principle of life; this must be sought for from the common atmosphere." The desired vital principle was not so easily obtained "from the common atmosphere." The apparatus that seemed best to answer the purpose was not always at hand; and when it could be tried, the good effects of artificial respiration were

defeated by the falling backwards of the tongue and closure of the glottis. It was therefore directed that the tongue should be drawn forwards, and the trachea pressed backwards; and by such measures the process was sometimes successfully performed.

But the difficulties to be encountered so often led to failure that artificial respiration ceased to be much valued. The Royal Humane Society let it drop from the programme of measures directed to be tried; though some physicians tried to do what they could by pressing upon the chest to induce expiration, and waiting for the natural elasticity of the chest walls to cause inspiration. Generally, however, the tongue closed the glottis, and inspiration failed from its being opposed by two insurmountable obstacles. In this state of the question, Dr. Marshall Hall took it up. He saw before trying it, that if the patient, instead of lying on his *back*, should be turned on his *face*, the tongue, instead of falling backwards would fall forwards; he found that *semi-rotation* would effect the pressure and relaxation required; and thus, that, without apparatus of any kind, artificial respiration could be performed at once and effectually, and continued for any length of time without the least danger to the patient.

The suspension of respiration being the cause of death, the effect of this suspension is measured by the quantity of oxygen received from the atmosphere, and the quantity of carbonic-acid retained in the blood. The quantity of carbonic-acid evolved is augmented with augmented rapidity of circulation; but if retained in the blood it poisons in proportion to the rapidity of circulation. Respiration is the exhalation of carbonic-acid, and inhalation of oxygen. Drowning or strangulation stops both, but exhalation is of much greater immediate value to life.

"A mouse," says Dr. Hall, "will live in an atmosphere of nitrogen and oxygen in which there is *so little* oxygen that a lighted taper is immediately extinguished, flame and spark; and *die* in an atmosphere of carbonic-acid and oxygen in which there is *so much* oxygen, that a taper blown out, leaving a spark, is immediately re-inflamed. It is not the want of oxygen, but the excess of carbonic-acid which proves fatal."* There are however facts which appear to support the view that the inhalation of oxygen is the more important in the respiratory process. (*Brit. and For. Med. Chir. Rev.*, April, 1858, p. 223.)

The phenomena of "blood-poisoning" from suspended respiration in an animal submerged in water are: "1. *Voluntary* efforts to escape; 2d. stillness or *anæsthesia*; 3d. *gasping*; 4th. lingering circulation, but apparent death." If the animal be placed in a limited quantity of air, there are; 1st. nocturnal breathing, unless excited emotionally; 2d. "panting;" and 3d. *gasping*. The *anæsthesia* depends on poison-

* "Prone postural respiration in drowning, and other forms of apnœa, or suspended respiration." By Marshall Hall, M.D., F.R.S., &c. London, 1857, pp 216.

ing of the brain; the "panting" on respiration of carbonic-acid; "gasping" upon poisoning of the spinal centre—the latter being also indicated by open mouth, starts, tottering gait, and paralytic weakness of the posterior extremities. These phenomena proceed with rapidity, inversely proportionate to age, temperature, degree of activity, and elevation in the zoological scale."

The length of time during which respiration may be suspended, and the animal be susceptible of resuscitation varies greatly in different animals. "A lethargic bat, submerged in water at 40° Fahr., was uninjured after sixteen minutes; a hedgehog, submerged for twenty minutes, recovered under similar circumstances. But these animals die as speedily as other warm-blooded animals if submerged in a state of activity.

The object of treatment in apnea is, first to eliminate the carbonic acid already in the blood, and, secondly, to check its further accumulation. For this purpose artificial respiration is the most important agent. Dr. Hall says:

"When the subject is kept in the *supine* position, events occur which render *every* attempt at inducing respiration absolutely nugatory; the tongue may fall backwards, carrying with it the epiglottis, and close the glottis or entrance into the windpipe and air-passages. Fluids already in the mouth or fauces, or regurgitated from the stomach, may not only obstruct the air-passages, but be forced or drawn back into the windpipe, and so add a *new* source of apnea. "These obstacles are obviated at once by reversing the position from the supine to the prone." (p. 23.)

It was shown by the experiments of Mr. George Webster, that when the body is placed in a prone position, inspiration and expiration can be readily produced, and continued at pleasure, by the mere exercise and relaxation of pressure; and such alternations being easily accomplished by rotating the body from the prone to the lateral posture. "Mr. Fox, Mr. Hunter, and Mr. Bowles, of St. George's Hospital, performed further experiments, and measuring the quantity of air respired, found it sufficient."

Upon the ideas developed by such researches as these, Dr. Hall constructed his system of resuscitation of drowned persons. His rules of operating, which have now been often published, were first presented in an essay sent to the Royal Humane Society, in January, 1856. The Society issued a circular to some of its members, requesting each to give his opinion of the new mode of treatment. From these gentlemen ten different answers were received, one of which was from Sir Benjamin Brodie; but they ventured to give no further advice than that the Society should not venture to try the method recommended, until some body else would try it first and find it successful.

That Society, like most other large bodies, "moved slowly" in the path of improvement. In a year and-a-half more, Marshall Hall was dead, and he left the Royal Humane Society waiting still for somebody to test the value and safety of "the Marshall Method" of treating asphyxia. It had already been often tried with success.

The length of time that a patient may remain entirely submersed in water, and afterwards be restored by any known means of resuscitation has not been determined by medical experience.

Cases, says Marshall Hall, are recorded of the human subject being restored after many minutes of submersion. It might well be doubted whether the facts so recorded were correctly observed.

Perhaps one of the longest *well-authenticated* submersions, after which restoration was effected, was that reported in the *London Medical Gazette*, for December 23d, 1842. In that case the *time of submersion was fourteen minutes*; and the efforts to restore respiration were continued for *eight hours* before the process of breathing was fully re-established. In ordinary cases, where the *supposed* time of submersion was much longer, the want of accurate observation leaves the actual time a question that cannot be decided; the witnesses, if any are present, are too much excited to note the minutes as they pass, which, under such circumstances, *seem* to pass slowly. One of the latest recorded cases is that reported by Dr. Alfred C. Garratt, in the *Boston Medical and Surgical Journal*, Sept. 5, 1861.

He says that a patient who had been immersed in *ice cold* water for *twenty or thirty minutes*, "some verily believing it was an hour," was taken out of the water cold and apparently lifeless, and restored."

What are the conditions under which resuscitation is possible? Dr. Paton says he has "not been able, by artificial respiration, to revivify a cold-blooded animal after the pulsations of the heart had fallen below eight per minute, and the commencement of sensibility is always preceded by natural respiration." Dr. Cartwright says, an alligator may be resuscitated half an hour after apparent death from asphyxia, by inflating the lungs." Müller states, that "in a warm-blooded animal, dying by asphyxia, the heart will continue to contract for half an hour after apparent death. But undoubtedly there would be no hope of recovery after that period, though it has been repeatedly stated by physiologists, that warm-blooded animals may be recovered from asphyxia, after the heart has ceased to beat."*

"The truth is," says Dr. Paton, "that in all these cases where the circulation has been supposed to be restored by artificial respiration after the heart ceased to beat, it was only the first stage of asphyxia that had been reached, that of insensibility, and the cessation of the

* Watson's Lectures, Vol. I., p. 67.

function of respiration. The heart still continued to contract and the venous blood to circulate, however feeble may have been the power by which it was maintained."

It is evident, then, that "asphyxia depends on the want of oxygen to the blood;" and that the most important remedial measure is its speedy restoration; and this will be accomplished by inflating the chest with atmospheric air. But every precaution must be taken to employ no force in the use of the remedy, or it will be apt to rupture the air-cells and produce emphysema of the lungs."

Galvanism can not "stimulate the heart to action," nor can "external heat maintain the temperature of the body if the means of supplying oxygen to the blood be neglected. This must be considered as the object of great and primary importance, and all other remedial agents must be subsidiary to it."*

The galvanic experiments of Dr. Ure on the body of the criminal Clydesdale, after he had been suspended nearly an hour from the gallows, justify farther trials of this agent in cases of suspended animation. By passing the galvanic current through various sets of muscles to the nerves of which the electric conductors were applied, "the body was agitated by convulsive movements resembling a violent shuddering from cold;" the limbs were forcibly extended; full and laborious breathing was produced, the chest heaved and fell, the abdomen was protruded and again collapsed. When one conductor was applied to the supra-orbital nerve in the eyebrow, and the other conductor to the heel, and carrying the point of one conductor along the edges of the galvanic plates, the most extraordinary grimaces were exhibited; and "fifty shocks, each greater than the preceding one, were given in two seconds. Every muscle of the countenance was simultaneously thrown into fearful action; rage, horror, despair, anguish and ghastly smiles, united their hideous expressions in the murderer's face." Some of the spectators were driven in terror from the apartment, "and one gentleman fainted." In another experiment, the fingers were made to move nimbly like those of a violin performer, a finger extended forcibly; and, "from the convulsive agitation of the arm, he seemed to point to the different spectators, some of whom thought he had come to life." (*Ure's Chem. Dictionary*.)

The experiments of Ure were repeated by a Committee of the Medical Society of Lancaster County, Pennsylvania, on a criminal executed by hanging in 1839. They produced violent action of the pectoral muscles and established full respiratory action, the mouth opening and closing regularly. The breathing was so forcible that a lighted candle applied to the nose was blown out instantly. This was repeated five

* Dr. George Paton, *British American Journal*, Dec., 1861.

times in succession, and the inspiration was so strong that the flame was drawn in with the breath, singing the hair in the nostrils. In other experiments the muscles of the face were drawn in various directions, elevating the angles of the mouth, closing the eyes with tremulous movements; the arms and hands were flexed and extended, and moved from place to place; the muscles employed in mastication performed all the functions imitating the actions of tasting and eating. (*Western Jour. Med. Sciences*, p. 264, May, 1840.)

Asphyxia from Carbonic-acid Gas.—Persons will shut themselves up in a room in which charcoal or mineral coal are burning without a free draught to carry off the gases formed, or in confined places which old wood work has reached that point in decay in which it becomes phosphorescent, giving out light in the dark (called "fox-fire") in a state of very slow spontaneous combustion. Such persons have often been found "dead or dying, and so feeble as to be unable to go into the open air to open a door or window, or to call for aid. They suffer much and know the danger, but cannot make up their minds to move from the spot, as persons who in extreme cold weather, sit down to sleep in the cold air; they know the fate that is before them, but want energy to resist it." (Hering.)

Symptoms of Carbonic-acid Gas.—Before animation is suspended there are: nausea, retching and vomiting—sometimes of blood; a heavy burden seems to oppress the chest; the face becomes red, and at last purple and bloated; the patient is seized with involuntary and hysterical weeping; he talks incoherently, is seized with convulsions or apoplexy and falls down suddenly.

Treatment.—Carry the patient into fresh air; rub with vinegar and let him inhale it. If the face is already red and beginning to rave, throw cold water on the head, apply warmth to the feet. Give Opium first, and after some trials of that, give Belladonna. If the patient talks much and rapidly, complains of shooting pains; or feels as if he were flying, feels giddy when lying down, give Coffea.

When rooms are long shut up without ventilation, the air becomes stagnant and putrid, almost like the stagnant water of standing pools. Persons who try to sleep in such rooms are likely to be attacked by "nightmare, frightful dreams, visions, depression of spirits, and fearfulness approaching to horror."

Treatment.—There must be entire purification of the air by ventilation, opening all doors and windows, and making up a blazing fire; place water in shallow vessels about the room. *Remedies:* Aconite, Opium, Veratrum, Vapor of Camphor, or Ammonia.

Oxygen Gas.—Experiments on animals show that inhalation of oxygen gas increases the fibrine and diminishes the corpuscles and albumen of the blood. In the treatment of disease, Dr. Erichson (Mono-

graph on *Aphyxia*) says: he never succeeded in re-exciting the contractions of the ventricle by means of the inflation of the lungs, when only common air was employed, "provided they had fairly ceased to act before artificial respiration was set up." He was then led to try oxygen, and in several experiments was successful in restoring the action of the ventricles, after entire cessation of the heart's action.

Unpleasant Symptoms of Oxygen.—Extremely small doses (inhaled) often cause: sense of contraction of the forehead and temples; weight over the centre of the parietal bones and occiput; rush of blood to the head; fullness, pain or oppressive sensation in the neck and base of the brain; sudden faintness, palpitation of the heart; spasmodic contraction of the affected parts; violent reflex movements in the extremities affected with paralysis of voluntary motion; unnatural excitement of the entire nervous and vascular systems, lasting several days after one moderate dose.

Large doses produced in thin anaemic persons, sudden or gradual disappearance of the pulse; pallor of the countenance; coldness and partial collapse. In plethoric and sanguine persons the reverse, viz.: too excited a circulation; full bounding pulse; intense heat of the head, face, and skin; severe oppressive headache; frequent and long-continued use of it has caused much emaciation.

Beneficial Effects.—Complete relief from oppression of the brain; sight improved in defective vision consequent upon venous congestion; general warmth even to the ends of the toes and fingers, succeeding to great nervous depression; permanent relief given to the uterus, ovaries, and spine by sudden induction of long-suppressed catamenia, particularly at the change of life; unexpected diarrhoea of highly offensive character, with dark inspissated bile, in long-continued torpor of the liver and portal system; cutaneous transpiration, suddenly and freely induced; improved appetite and powers of digestion and assimilation, increased strength; clearer, fairer, and softer skin.

Fainting, Swooning, Syncope.—Treatment.—Avoid all excitement, loosen the clothing, if tight about the neck, chest or abdomen; place the patient in a comfortable situation; remove any object which might make a disagreeable impression on the mind when consciousness returns. Sprinkle fresh water lightly on the face, neck, back of the head or pit of the stomach. Hold Camphor to the nose. Hartshorn may also be tried but with caution.

Remedies may be selected according to the supposed cause of the disease.

Colocynth, Aconite, or Opium for fainting caused by fright. *Aconite* when caused by violent pain.

China.—Fainting from loss of blood or other debilitating causes.

Wine for similar cases, but give it in very small quantities.

Ignatia or Chamomilla.—Fainting from mental emotions, from great pain.

Hepar.—When the slightest pain causes fainting.

Cocculus or Chamomilla.—Fainting from violent pain, preceded by giddiness.

Veratrum.—Fainting after excessive pain, or after trifling exercise.

Nux-vom.—Fainting in the morning, in persons who have used ardent spirits, have been injured by severe application; or fainting after dinner. Phosphoric-acid also for the same symptoms.

Carbo-Veg.—When the system has been debilitated by Mercury.

The proper remedy should give relief in ten or twenty minutes at most.

Apparent Death.—In cases of apparent death too much should not be done nor too many things tried until some examination of the patient and surrounding circumstances is made. There may be appearance of death, especially after some violent injury, when the functions of life only are suspended. When there is the least uncertainty, and in all cases where animation has been suddenly suspended, and putrefaction does not commence as suddenly, nothing should be done that can possibly cause death. Interment should be postponed to at least the third day, at which time some changes will take place that will be decisive. If at the end of this period no marks of decay be perceived, all further proceedings should be delayed till putrefaction evidently commences, though a week should elapse. The body should be treated with the greatest care, giving opportunity for resuscitation so long as that is possible.

Apparent death may be caused by: Hunger, a fall, suffocation, hanging, pressure of choking, from drowning, from being frozen, from lightening, from apoplexy.

Apparent Death from Suffocation, Hanging, Pressure, Choking.—Remove all tight clothing, place the patient in a proper position, with the head and neck high, and the neck in easy position. Then commence rubbing gently but steadily, with warm clothes. Give at once by injection a drop of tincture of Opium in a pint of water. This may be repeated every quarter of an hour, continuing the rubbing of the limbs. When respiration begins in the slightest degree it will be observed by holding a looking-glass before the mouth and nose occasionally, that the dampness of the breath may show on the glass. Warm cloths, or hot stones wrapped in cloths may be applied to the feet, between the thighs, to the neck, the sides, and under the shoulders.

Opium may be given by the mouth occasionally. Aconite may also be tried.

4. CATALEPSY.—TRANCE.

This remarkable affection of the brain and nervous system is thus defined by systematic writers: A sudden deprivation of sense, intelligence, and voluntary motion, the patient retaining the same position during the paroxysm as that held at the moment of attack; or in which he may be placed during its continuance; the pulse and respiration being little affected, sometimes quick and small.

The paroxysms of cataleptic seizure are intermittent, but without regard to regularity of periods. They are sometimes announced by premonitory headache, mutability of temper, yawning, tinnitus aurium, vertigo, palpitations, lassitude, pain or slight spasms of the limbs or neck, confusion of mind, &c. But in most clearly-marked cases the attack is sudden,—the patient retaining the same expression of the countenance and posture of the body as before. The eyes are fixed, either open or shut; the pupils usually dilated, but contracting when a strong light is thrown upon them; and from their unvarying expression, and the unchanged attitude, the body has the appearance of a statue. Any position, in which the head, trunk or limbs are placed, is retained without deviation; the condition of both the flexor and extensor muscles is such as to admit of a change to any possible position, and its retention for the whole term of the paroxysm. During this time the countenance is little changed, sometimes paler than usual, or slightly suffused, respiration little embarrassed.

The duration of the state of unconsciousness varies from a few minutes to many days. Restoration to the natural state is usually instantaneous, accompanied with sighing, and followed by pain or confusion in the head, with a feeling of lassitude. The patient has no recollection of what has passed during the fit; and the same ideas, and in some cases the same sentences which have been suspended by the seizure, have been resumed at the moment of recovery. No efforts to restore consciousness are effectual, the loudest noises, and even moving the body or pinching it, are not felt at the time or remembered afterwards.

In an imperfect form of catalepsy, called *catochus*, the abolition of the senses is only partial; the patient being conscious of what is passing, but incapable of moving or speaking.

Case by Dr. Gooch.—A lady who was suffering from puerperal mania was restrained in a strait-waistcoat. Dr. Gooch says: “A few days after our first visit, we were summoned to observe a remarkable change in her symptoms; the attendants said she was dying or in a trance. She was lying in bed, motionless, and apparently senseless. It had been said that the pupils were dilated and motionless, and some apprehensions of effusion on the brain had been entertained; but on examining them closely, it was found that they readily contracted.”

the light fell upon them; her eyes were open, but no rising of the chest, no appearance of respiration could be seen; the only signs of life were her warmth and pulse; the latter was weak, and about one hundred and twenty.

"The trunk of the body was now lifted so as to form rather an obtuse angle with the limbs, (a most uncomfortable posture,) and there left with nothing to support it; there she continued sitting while we were asking questions and conversing, so that many minutes must have passed. One arm was now raised, then the other, and where they were left there they remained. It was now a curious sight to see her, sitting up in bed, her eyes open, staring lifelessly, her arms outstretched, yet without any visible sign of animation. She was very thin and pallid, and looked like a corpse that had been propped up and had stiffened in this attitude. We now took her out of bed, placed her upright, and endeavored to arouse her by calling loudly in her ears, but in vain. She stood up, but as inanimate as a statue. The slightest push put her off her balance. No exertion was made to regain it. She would have fallen if I had not caught her. She went into this state three several times. The first time it lasted fourteen hours, the second time twelve hours, the third time nine hours; with waking intervals of two days after the first fit, and one day after the second." After this the disease assumed the ordinary form of melancholia, and she recovered ordinary health after three months.

Case by Dr. Johnson, King's County Medical Society.—"A Mr. J., teacher, having charge of a large academy; takes little exercise; constipation lasting for a week at a time without movement; he would perform the labor of the day, and then sit up till twelve or two o'clock, A.M., engaged in solving some difficult problem, thus overtasking the mind and disregarding the laws of health. On one evening, when a little tired with travelling, while conversing with a friend, he was suddenly seized with catalepsy; was thought to be dying; was perfectly unconscious; every muscle was tense and rigid, hardly moveable; the limbs were in a straight line with the body; arms folded across the chest; no movement of the thorax, or respiration perceptible; pulse feeble and scarcely felt between the rigid tendons; beating of the heart very faint; eyelids closed, impossible to open them; pupils contracted, rolled up under the lid; he is completely unconscious of pinching, pricking with pins; joints stiff; he was raised up by the heels so that his body was held in a horizontal position, the neck resting on the back of the chair till the assistant supporting his feet was tired, but there was no relaxation of the muscles or return of consciousness. There was neither opisthotonus nor emprosthotonus, otherwise the case resembled tetanus. Almost impossible to move the hands or feet, but they remained wherever placed. After remaining in this condition an hour a flutter-

ing of the heart was noticed; when spoken to, he turned wildly round with a confused, unconscious stare, and closed his eyes. The limbs became flaccid, and in a few minutes he became completely conscious. He said there was no pain. During the night a slight return, but it passed off, and he continued awake the whole night in spite of twelve m. doses of Magendie's solution of morphine every hour.

"Next morning, countenance sallow, extremely bilious; was rational but while conversing was seized with the same rigidity as before; total loss of consciousness for twenty minutes. Rigidity then passed off and was followed by delirium, during which he would figure up large sums with amazing rapidity, repeating long rows of figures, and then coming over them again in the same order. His muscular power was so great that several men could not hold him, though perfectly under the control of a lady whom he imagined the same to whom he was engaged. He recovered after a few days."

DIAGNOSIS.—Catalepsy, when it comes on spontaneously, differs from *ecstacy*, *somnambulism*, *reverie* or *clairvoyance*, by being always associated with perceptible physical disease. It is, therefore, a curable affection by the proper application of remedies. The latter named abnormal states are at this day generally produced by voluntary effort. The propriety of making such effort, and opening the doors between the frail inhabitant of a material body and the little known influences formerly regarded as *supernatural*, must be left to the consideration of those who practice it.

The danger of mistaking catalepsy or other abnormal conditions for real dissolution, renders it necessary here to review the principal points by which they may be distinguished.

Symptoms of Death.—Impatience of covering; throwing off the bed-clothes, as if for the purpose of getting the fresh air to come in contact with the skin. (*Symond's Cyclopaedia of Anatomy and Physiology.*) It is supposed by Edwards that the air produces some change in the skin as it does in the lungs. This symptom is frequently present where there is little disturbance in the organs of respiration. Orfila mentions a case of poisoning by sulphuric acid, in which the patient made constant efforts to throw off even the lightest covering. It is rather probable that the tossing of the arms and throwing off of the covering depends on a certain inexpressible anxiety at the praecordia or the chest; this is seen most plainly in epidemic cholera. The skin there is blue, and cold, and clammy, while the patient declares that he is "burning up," and throws off all covering, pressing the hand to the pit of the stomach.

On the Signs that Death has really Occurred.—Dr. Whiting published a book "*On the Disorder of Death,*" in which he gathers up so many horrible stories of persons "*buried alive,*" as almost makes

afraid to die for fear he may be buried alive. In England where the body is usually kept several days, the probabilities of a premature burial are not very strong; but in this country where it is common to bury the dead, at most within a day or two, there is reason to believe that premature burial is common. Buhier has collected the details of fifty-two cases of persons buried alive; of fifty-three who recovered without assistance, after they were laid in their coffins; and of seventy-two falsely reported dead.

The signs of the total extinction of the functions of life are not so unequivocal as most persons suppose they are. Cessation of respiration and circulation cannot afford positive evidence, for the external senses are not sufficiently perfect to enable us to detect either respiration or the circulation in the smallest degree compatible with mere existence. Foubert proposed as a test, to make an incision into one of the intercostal spaces and feel the heart with the finger!

Loss of heat is not conclusive; for life may exist and recovery may take place when no perceptible heat exists.

Galvanism has been supposed to furnish a certain test. Nystau showed that irritability is first extinguished in the left ventricle; in forty-five minutes it leaves the intestines and stomach; so on after this the bladder; and, in one hour, the right ventricle; in one-and-a-half hours the oesophagus; in fifteen minutes more it leaves the iris. It next ceases to be perceptible in the muscles of the trunk; then leaves the upper and lower extremities, and lastly, the right auricle. The duration of contractility is shortened by a warm and humid state of the atmosphere. After death there is, first, softness and flexibility; then rigidity, which some think the last effort of vitality, others think it analogous to coagulation of the blood. The collapsed edge of a wound in a dead body, in distinction from a gashing wound in a living body, is the result of a peculiar irritability. The annihilation of this is one of the surest signs of death. Rigidity is a pretty certain sign of death; flaccidity, quite so; putrefaction, unequivocal. All other supposed evidences of real death have often led careless physicians and friends into the great error of mistaking a temporary trance for absolute dissolution. The number of persons who have revived at a last moment when about to be consigned to the coffin, is fearfully great. The number known to have been really BURIED ALIVE, are already sufficient to justify extraordinary precautions in every case.

The opinion prevailed among the ancients that dying persons were gifted with some peculiar illumination by which they were able to foresee the future; but modern physicians have thought the circumstances of each case might explain all that is really met with in such cases. The disease under which the dying patient is sinking, always acts in some manner upon the mind. Thus consumption excites the feelings

of hope and security. The consumptive always expresses himself as "better," and his conversation is of every thing but *death* and the *grave*. Like the swan on his last voyage, "Floating down by himself to die,"

"Death darkens his eye and unplumes his wings,
But his sweetest song is the last he sings."

Palsy excites feelings of fretfulness and discontent. Diseases of the heart arouse involuntary terrors; and some diseased states of the intellect excite morbid sharpness of the faculties of the mind. It is not strange, then, that the death-beds of those about to sink under diseases of the mind, should exhibit marked energy under bodily decay. The passions during life have obscured judgment, but they are extinguished at the approach of death. And the inferences which wisdom had drawn from the former experiences of life are now rendered available to correct the erroneous opinions which have hitherto interfered with the best use of the bodily powers. Milton says:

"—— Old experience doth attain
To something of prophetic strain."

The explanation given by Sir H. Halford, of the prophetic power ascribed to certain persons at the close of life is that commonly received. He says "it arises from the strength and unwonted vivacity of thought and solemnity of feeling, that led Aretæus to give this explanation of it. This is particularly the case in brain-fever which, when its violence subsides, clears the patient's mind and renders his sensations exquisitely keen. 'He,' says this author, 'is the first to discover that he is about to die, and announces it to his attendants; he seems to hold converse with the spirits of those departed from earth before him as if they stood in his presence. In diseases of the mind these phenomena observed by Aretæus are often witnessed. The description of the death-scene of Don Quixotte, whether true in fact or invented by Cervantes, is true to nature.' (*Halford's Essays on Death and Madness*.)

On the Length of time passed since Death was Complete.—In from two to twenty hours the flexibility, elasticity, heat and contractility of the living body entirely disappear. "In from ten hours to three days," says Devergie, "we find the rigidity of the joints, pitting of the soft parts, change of appearance of the skin, loss of animal heat perfect, and no contraction under the stimulus of electricity." In from three to eight days there remains flexibility after rigidity, and no contractility. After from five to twelve days, the soft parts are puffed, elastic and shining. After the twelfth day, there is easy separation of the epidermis, and a green tint of the abdominal integuments; these indications give merely approximations to truth. Much depends on

the temperature, as five or six hours in summer are equal to ten or fifteen days in winter.

CAUSES OF CATALEPTIC SEIZURES.—*Predisposing.*—Whatever diminishes vital power and increases the susceptibility of the nervous system; depressing passions; hereditary debility; hysterical temperament; sorrow, anxiety; intense mental labors; nervous exhaustion, however induced; nervous derangement caused by mercury. It may occur at any age, but is more common in females than males, and at or after the age of puberty.

Exciting Causes.—Violent mental impressions; great mental application; fright, terror or dread; suppression of the menses; concealed emotions; ungratified love or passion; ovarian disease. In certain constitutions the trance state can be artificially induced, a proceeding which involves the subject of it in many perils little understood by persons who permit or encourage it.

Treatment.—The treatment of catalepsy in general, must be directed by the general principles which govern us in the forms of disease with which it is associated.

PRINCIPAL REMEDIES FOR CATALEPSY.—*Cham., Ipec., Plat., Stram., Acon., Agaricus, Bell., Cicuta, Hyos., Mosch., Veratr., Asafetida, Camph., Coloc., Ignatia, Merc., Opium, Petroleum.*

SOMNAMBULISM.—*Bry., Natr.-m., Silicea, Sulph., Petrol., Phosphor.*

Natural Clairvoyance.—*Remedies.*—*Phosphorus, Acon., Bry., Cic., Hyos., Agaricus, Mosch., Natrum-mur., Sil., Sulph., Veratr.*

Cannabis-indica.—This remedy, more than other known to us, completely simulates in its action the phenomena of catalepsy. It deserves to be more fully tried in this disease.

A Case with Uterine Complications.—A lady aged twenty-nine, subject from her childhood to palpitations of the heart. She has clear white skin, dark brown hair and blue eyes. For five years she has suffered from continual headache which extends over the vertex from the forehead to the occiput, but severest on the top of the head. She cannot make or receive visits, as prolonged conversation aggravates the headache, produces vomiting, and compels her to remain three or four days in perfect quiet in bed. Slight departure from prescribed rules in diet causes gastralgia, vomiting of acid water and eructations of gas. She cannot bear the taste or smell of animal food. Menses irregular, pale, and small in quantity, appearing eight days too early; fluor albus in the interval; colic pains preceding the next period; the lungs not diseased. On waking in the morning from a sound but unrefreshing sleep, if permitted to fall to sleep again, she goes into a profound cataleptic trance, in which state she remains for several hours. These "fits" come and go without the least provocation, and pass off without leaving any bad effect behind them. Damp weather aggra-

vates all her abnormal symptoms, and causes fits of melancholy; worse in the evening. She feels always chilly; hands and feet being cold.

Dr. Von Grauvogl, of Nuremberg, prescribed in this case *Nux-vomica* 3°, morning and evening, and *Ipecac.* 3°, during the day every two hours. He says he knows no remedies but these which "can produce a more lively change in all the tissues, and thus more heat in the body, enabling it to withstand the influences of cold and dampness, and at the same time vivifying the nervous system." He thought it necessary to give them in the same day for a week, leaving them off the next, and thus change the constitutional condition before any thing would cure the headache. Wines, coffee, fruits, vinegar and cold bathing to be avoided. In a month she was less chilly; the cataleptic fits had diminished; headache and palpitation remaining. After improvement from mountain travelling, the headache was again excited by crossing a lake. Gave *Aranea-diadema*, which lessens the influence of dampness. The menstrual period was prolonged for the first time to four weeks, but the flow was much increased, as this remedy causes profuse haemorrhages, even of the lungs in females. In two weeks more the headaches had greatly subsided; in a week more there were intervals of a day or two, and soon they ceased altogether, after having troubled her for six years. The palpitation of the heart still remained, but it was mitigated by Puls. 30°. This losing effect in a few days, Puls. 3° was finally effectual. The fluor albus was removed by Magnes.-sulph. 6°; the patient was then perfectly cured. (*Hirschel's Klinik.*)

Somnambulism.—*Cedron.*—*Dr. Casanova.*—“A grown person and two children, (a girl and a boy,) who were in the habit of getting up at night and walking about the room in a perfect and profound state of sleep, were cured, in less than a week of that sort of periodic somnambulism, by repeated doses of *Cedron*, 6 to 12, taken two hours before going to bed, and their uninterrupted sleep was restored. The former of these three patients could read and play on the pianoforte in that state. At other times she would descend from her bedroom to the pantry, and help herself to food, returning to her chamber without disturbing any one in the house. The little girl was in the habit of taking her needle-work and sewing in her bed. The boy would insist always in opening the front door to go, as he said, ‘to school,’ carrying his books, &c., with him.”

5. APOPLEXY.

The word Apoplexy is derived from the Greek words *apo*, and *πληγή*, meaning to *strike* or knock down; because the persons seized with this disease fall down suddenly. Hence the common appellation of

apoplectic stroke, or stroke of the palsy. There are two principal forms of this disease :

1. When it consists in a congestion of blood in the brain or within the cranium, it is called *sanguineous apoplexy*.

2. In *serous apoplexy* the effusion within the cranium consists of serous fluid. The word apoplexy is generally used to denote cerebral pressure ; and all its varieties seem to depend on the nature of the fluid poured out upon or within the brain, the part of that organ injured, and the quantity of the effused fluid.

General Description of Apoplexy.—A man who had been in apparently good health suddenly falls down, and entirely or partially loses the use of all his senses, while the vital functions, as the respiration and circulation of the blood continue. The countenance is livid, the vessels of the face and head turgid with blood ; the breathing is ster torous, slow, and laborious, though sometimes it is more rapid and vigorous ; the limbs lie powerless ; the pulse is full, slow, and intermittent. From this state he rarely rallies, but continues to sink gradually, and, at length dies in the course of forty-eight hours.

His brain, when examined after death, is found to have been more or less torn and destroyed by extravasated blood. In such a well-marked case as this, all the essential symptoms of apoplexy appear, and *all* the effects of extravasation on the brain are produced—all the centres of nervous power within the cranium are effected.—(*Solly on the Brain*, p. 363.)

DIAGNOSIS.—Apoplexy may usually be distinguished by the general symptoms above given, which are more or less conspicuously present in every case. It is distinguished from syncope by the patient not being pale and cold, and the pulse is full and strong, though slow.

The attack could not be mistaken for sleep, as it occurred too suddenly, and the patient could not be awakened.

Apoplexy may be distinguished from epilepsy by the absence of convulsions, and the sudden cry that usually attends them.

Some cases are less strongly marked and might be mistaken for some other disease by a careless observer.

Of the Different Forms of Apoplexy.—1. Those in which there is profound coma, the accompanying symptoms being less conspicuous.

2. Those which begin with a sudden attack of headache, passing gradually into apoplexy, with other symptoms resembling syncope.

3. Those characterized by palsy and loss of speech without coma. (*Abercrombie.*) The first form depends on such sudden and extensive effusion into the hemispheres of the brain that the powers of the hemispherical ganglion are at once arrested, as in the case of severe concussion of the brain.

In the second form “the patient becomes pale, sick, and faint, gene-

rally vomits, and falls down," the body is cold, and the pulse very feeble. In some cases, these symptoms are accompanied by a slight convulsion; in other cases the patient does not fall, the sudden shocks, "being only attended by slight and transient loss of recollection. In either case he soon recovers from the first effects of the attack, is quite rational, and able to walk. But, in most cases, in a few minutes, in others, after several hours, the memory is observed to fail; the patient talks incoherently, and then sinks into coma, from which he never recovers." (*Solly*, p. 365; *Abercrombie*, p. 204.) In some cases paralysis of one side occurs, but in the majority of these cases there is none.

In these cases the effusion takes place "on the surface of the vertex of the brain, and, being small in quantity, it gives no headache, and the effusion takes place so slowly that the powers of the sensorium are not at once annihilated;" "effusion progresses till the cerebral ganglia are compressed, and the patient dies comatose." In some cases similar symptoms arise from extravasation in the brain produced by external injury; a partial recovery from the first effects of the injury is sometimes followed by death, which results from pressure on the brain, as in apoplexy.

Apoplexy may occur as an idiopathic, or as a symptomatic affection and in an inflammatory or an adynamic form. We may also, with propriety, divide it into three varieties: the *sanguineous*, or extravasation of blood upon the brain; the *serous*, or effusion of serum; and, finally, the *simple* apoplexy, produced by abnormal distention of the vessels of the brain. The symptoms will vary according to the extent of the effusion, and the part of the brain in which the extravasation is located. If the fluid is so situated as to make pressure upon the hemispheres, there will be a sudden loss of consciousness, coma, and stertorous respiration. If the effusion occurs upon the surface of the vertex of the brain, the symptoms, according to Abercrombie, will be moderate in the first instance, but as the effusion increases, comatose symptoms come on, and the patient succumbs; when the effusion occurs near the base of the brain, there is no coma or loss of consciousness, but we find loss of speech and paralysis. It is most common at the age of fifty or sixty years, but it sometimes occurs in subjects of twenty-five or thirty years.

CAUSES.—Apoplexy occurs most frequently in large towns amongst the opulent and luxurious. The impure air of cities acts as a powerful predisposing cause, and, in conjunction with the numerous vices prevalent in a patrician society, as want of exercise, high living, excesses in the use of stimulants, and the pleasures of love, afford a solution to the fact of its more frequent occurrence in towns than in the country.

The most common proximate causes of *sanguineous*, and of *simple* apoplexy are: want of exercise, excesses in eating, love, suppression of an habitual nasal haemorrhage, unnatural fullness of the blood-vessels of the brain from any cause, violent mental emotions, excessive study, and great physical exertion.

The most favorable condition for the occurrence of serous apoplexy is, general debility and enervation, whether from insufficient nutriment, excessive mental or bodily labor, sickness, old age, long-continued intemperance, abuse of drugs, or the depressing emotions.

A peculiar physical conformation, consisting in: a plethoric constitution; full, florid, livid, or dark-red countenance; stout and short body, with short neck, and head disproportionately large; advanced age; hereditary predisposition, dependent on a similar morbid condition of the cerebral vessels, or of the heart and its valves, corpulence, &c.

Frank asserts that it is not rare to find *serous* and *sanguineous* effusion in the same brain, and he has detailed several instances of this kind which have fallen under his own observation.

Secondary Causes.—Organic disease of the heart and arteries; disease of the lungs; sudden changes in the system from cessation of the menses, or drying up of pus-secreting surfaces, or haemorrhoids; intemperance, luxurious living, and sedentary habits predispose to apoplexy, by promoting plethora at the same time that they cause dyspepsia and constipation. Structural disease of the heart, particularly hypertrophy of the left ventricle is often found on dissection of persons who have died of apoplexy. In these cases, the blood is propelled forward with increased power upon the arteries of the brain, which are often weakened and rendered less elastic by the deposition of an atheromatous deposit on their interior surface. (*Solly*, p. 364.) Dr. Burrows has shown that in many cases of apoplexy there is no primary disease of the brain; and that hypertrophy of the left ventricle, or valvular obstructions in the heart will lead to lesions within the cranium in the manner described. (*Burrows*, p. 124.)

Premonitory Symptoms of an Attack of Apoplexy.—Though the attack usually comes on suddenly, it is generally preceded by various symptoms which portend its approach. Among these are: an unusual tendency to sleep; sleep unrefreshing and disturbed by dreams; sleeping long and heavily, with laborious and stertorous breathing; constant dull pain in the head; vertigo, or swimming in the head after stooping; the cerebral nerves feel irritated; aching pain in the brain; the countenance exhibits a livid hue; the veins in the forehead become turgid, the carotids and temporal arteries throb forcibly; increased heat and redness of the scalp; ringing or buzzing in the ears; partial deafness or blindness; double vision, or injected state of the eyes:

mental faculties impaired; indisposition to perform mental labor; memory of the names of common things totally lost; recent occurrences forgotten; words in common use substituted for others; great irritability of temper, or apathetic indifference to every thing; cold hands and feet; the extremities feel numb, or "go to sleep;" tendency to paralysis; falling of the upper eye-lid; imperfect articulation of words; drawing of the corner of the mouth from palsy of the muscles of the opposite side; unsteadiness of gait in walking; frequent cramps and numbness of the limbs, toes or fingers; derangements of the stomach; irregularity in diet; voracious appetite, foul tongue, bad breath, constipation, and other dyspeptic symptoms, which are only temporarily removed by purgatives; the pulse is full, slow and intermitting. Though all of these symptoms, or any of them, may be considered as signs that apoplexy may be impending, it is also true that any of them may arise from other causes. When only a few of them concur in a single case, other symptoms less equivocal may be anticipated.

One of the most common cases of the accession of an attack of apoplexy is thus described by M. Serres. In a sanguine man, with short neck, and devoted to unrestrained indulgence of all the passions, the mind becomes unusually excited; an extraordinary facility of thinking and readiness of expression are observed. There is some numbness of one side of the body or face, and a fixed pain in the head; there is embarrassment of the tongue, difficulty of pronouncing certain words or letters; the loss of memory for names is often observed in persons devoted to profound meditation, or violent and prolonged sorrow. In this state any sudden excitement, or violent passion opposed, or movement of anger may develop a sudden attack, for which the brain is prepared by a concurrence of various causes; though it may yet be averted by judicious treatment. (*Serres, On a New Division of Apoplexies.*)

But, if the impending shock is not promptly met by the most judicious and energetic measures, the determination to the brain proceeds with increasing power. The patient hears a roaring noise in the ears from the throbbing of the carotid arteries; he sees flashes of lightning in the dark, and hears sudden sounds as of a pistol fired near his head; "woe to those who neglect such warnings." (*Serres.*)

Phenomena of an Attack of Apoplexy.—At the moment of invasion the face is unusually high colored; the cervical and facial veins swell, especially when there is mental excitement; the tongue first becomes embarrassed, the sight is troubled, the hearing impaired, and there is loss of sensibility, and of all the mental faculties; the patient falls suddenly down on that side which is soon to be stricken with paralysis. He immediately sinks into coma; his breathing is stertor-

ous, slow, hard; and the eye-lids hang down, as if paralyzed, though the eyes are staring and protruded, the pupils are insensible to light, and frequently dilated; the speech is impeded or entirely lost. Although the whole body is affected with the loss of motion, it, nevertheless, is displayed more plainly on one side than the other; and in this case the side least affected is somewhat convulsed; the mouth is drawn to the side opposite to that most affected by paralysis.

Some hours after the sudden invasion of apoplexy, if the brain is not greatly injured, respiration becomes more slow; the venous blood is mechanically abstracted, requiring increased powers of the circulation to propel it. As reaction advances the pulse becomes strong, quick, and full; the artery vibrates under the finger, and the action of the heart is increased according to the difficulty of respiration. M. Serres, who first noticed this contrast between the action of the lungs and the heart, says, the force and hardness of the pulse continues up to the moment of rupture of a blood-vessel in the brain; when, if the ruptured vessel be large, the pulse becomes suddenly small and frequent.

The breathing is equally full on both sides during some hours, and sometimes for the first days of the attack, but the thorax and lungs are unequally dilated; one side of the chest becomes motionless and the other redoubles its activity. On that side on which the action is lessened the ribs appear flattened, and on the other they are perceptibly elevated. This change takes place before hemiplegia occurs; and by this symptom we may decide which side is about to be paralyzed, and, in some cases active treatment may prevent it.

Both stupor and coma often exist in a high degree and the sensibility are equally obtuse in both sides; in some cases this is more observable in the side about to be paralyzed; in others the sensibility is heightened at the very time when the paralysis is on the point of appearing. Serres, who says he passed whole days and nights in observing the progress of numerous cases of this disease, often saw the distortion of the mouth preceded many hours by convulsive movements in the side soon to become motionless. The leg usually ceases to move before the arm. Sometimes sensibility remains; and almost always its loss precedes and accompanies that of mobility.

PATHOLOGY.—The appearances on dissection of persons who have died of apoplexy are varied by the extent and *locality* of the lesions found in the brain.

1. The effects of sanguineous effusion *into* the medulla oblongata is more suddenly fatal than any other part; and this is the only form that might be mistaken for disease of the heart; this part is not very vascular and seldom becomes the seat of effusion; but effusion *on* the surface of the medulla oblongata is more common, and is equally fatal, as it is from this part that all the nerves of respiration and the muscles

they command receive their power of action. Blood effused into the third ventricle from rupture of vessels of the *thalami*, or *corpora striata*, gradually finds its way down to the medulla oblongata, and is then speedily fatal. (*Solly*, p. 371.)

2. Effusion into the pons varolii produces paralysis of one or both limbs, according to its extent; but, after the first effect of the effusion is over, it does not effect the intellect, as the lesion does not extend to the hemispherical ganglion. As the effused blood advances towards the medulla the organs concerned in respiration are more and more affected: first the muscles of respiration are irregularly stimulated, and the sensibilities of the respiratory passages become increased; at length the exaltation is succeeded by paralysis, and the patient dies from suffocation.

3. Effusion into the crus cerebri produces paralysis of the extremities on the opposite side of the body, and often of the opposite eye, from its affecting the optic nerve without interfering with the mental faculties.

4. Effusion into the corpus striatum is invariably followed by paralysis, (*Morgagni*.) In persons who have died after paralysis of long duration these bodies are always greatly changed, and the stria nearly obliterated. The paralysis is always observed in the extremities of the side opposite to that in which the lesion occurs. So long as the extravasation is confined to this part of the brain, and does not extend to the convolutions, the mind remains unaffected. (*Solly*, p. 375.)

The connexion between the extravasation in one side of the brain and hemiplegia of the opposite side of the body has been demonstrated by an immense number of observations and dissections. M. Serres, who had proposed to himself to solve the problem of determining the seat of effusion in any given case of apoplexy, examined the brains of one hundred and seventy-one persons who died of cerebral apoplexy attended with paralysis of one side, found in every instance the lesion in the brain on the side opposite to that in which the hemiplegia appeared. He dissected forty-seven hemiplegic subjects who died at the Hospital le Pitié, "and forty-seven times found disorganization of the brain opposite to the paralyzed side. In one hundred brains received from Salpetrie, Bicetre, and Hotel Dieu, the alteration of the brain was always, without exception, on the opposite side. To these we may add two or three thousand cases contained in the annals of science." (*Serres New Division of Apoplexies. Phil. Med. Journal, Nov. 1824.*)

5. *Injury of the Thalamus Nervi Optici.*—This part of the brain is seldom injured without paralysis of some part. In some cases there have been loss of motion when sensation continued perfect. In other

cases, loss of both sensation and motion of both extremities on the side opposite to the injured part are the only peculiar symptoms. In none of these cases was the mind injured.

6. *Effusion confined to the Tubular Substance of the Hemispheres.*—After the first effect of effusion is passed, the intellect remains intact or only slightly disturbed, though loss of consciousness may remain for some hours.

In many cases the extreme symptoms of apoplexy leave little opportunity to distinguish the precise part of the brain which is the seat of the invasion, as the violence of the attack shows the case to be hopeless. A patient complains of sudden and violent headache, he becomes pale and vomits; if he is able to walk a few steps, the headache, pallor, and vomiting continue; the pulse is soft, consciousness is partially retained, but the patient is stupefied; by degrees the redness of the face and stupor increase; he answers slowly and with difficulty, and sinks into coma from which he can not be aroused. In these cases there is generally a ruptured blood-vessel from which blood is gradually extravasated on the brain. When partial recovery from these severe attacks takes place, there is generally paralysis of one or both sides. In some cases half the tongue, face or larynx remain in this state after consciousness is fully recovered.

7. *Effusion into the Cerebellum.*—The usual effects are: hemiplegia of the opposite side of the body; sight and hearing are generally affected, from the vicinity of the optic ganglia and auditory nerves; excitement of the generative organs is general, though not universal.

In the meningeal form of sanguineous apoplexy there is extravasation of blood on the surface of the brain. We find:

1. Effusion into the cavity of the arachnoid membrane.
2. Effusion into the sub-arachnoid tissue.

In the first variety there is never such a decided rupture of the vessels as is visible to the naked eye, hence it is called an exhalation. But the blood extravasated coagulates in the situation in which it is found, and soon becomes invested by a false membrane which is so fine and delicate, and so closely adapted to the original serous membrane, that the limits of each can scarcely be defined. (*Hewitt, Med. Chir. Transac.*, Vol. X.)

Symptoms.—In all cases of this kind there is pain in the head; and it is generally, though not always, followed by paralysis. The most striking characteristic is the occasional intermission of the symptoms. It is generally fatal, though not always so. The intellect remains unchanged so long as the effusion is confined to parts near the base of the brain; when it extends towards the upper part of the hemispheres coma and insensibility ensue. The cephalgia, redness, heat of the integuments of the face increase as the effusion advances. The intel-

lect is weakened by the compression of the brain ; but, as there is no inflammation of the hemispherical ganglion, sensibility and the mental faculties remain to be obliterated together when the pain, which becomes more and more excruciating, is overpowered by the extension of the effusion. The distress from the vomiting, the depression, with the feebleness of pulse, the paleness and diminution of sensibility and mental power are proportionate to the danger. (*Solly on the Human Brain*, p. 379.)

SEROUS APOPLEXY.

Apoplexy, in which the effusion into the brain consists of a serous instead of sanguineous fluid, is usually dependent on general debility, accompanied by local excitement and congestion of an asthenic character. There is paleness and bloatedness of the face, cachectic appearance, vomiting, fits of nausea, and a gradual setting in of complete or partial paralysis.

CAUSES.—It may arise from any of the ordinary causes of debility : as, injudicious depleting treatment of a patient of intemperate habits, in whom a blow on the head had excited subacute inflammation of the brain. In such persons inflammation or strong congestion may be easily excited, but bleeding and active purging only produce depression without lessening disease.

DIAGNOSIS.—Inflammatory apoplexy is for the most part confined to individuals of a sanguine temperament, plethoric, with short, thick necks, vigorous circulation, and a great amount of animal heat. The attack is often preceded by vertigo, unusual heat about the head, face red and full, eyes injected and troubled with *muscæ volitantes*. The invasion of the malady is so sudden that the patient is struck down instantly, deprived of all consciousness and power of motion. The respiration becomes stertorous, the cheeks and lips puffed out at each respiration ; the pulse is slow and full ; the pupils dilated, face red or livid, or purplish, throbbing of the carotid and temporal arteries, eyelids convulsed, either closed or half open ; paralysis of the muscles of one side, or of the face only ; and distention of the veins of the head and neck. After a time the breathing becomes less stertorous, the pulse more soft, and some signs of returning consciousness indicate convalescence ; or, as more often happens, these symptoms become more grave, and the vital forces continue to fail until the patient sinks under the disease.

Some of the marks which characterize *serous* apoplexy, are : general appearance of debility, face pale and haggard, pulse below the natural standard in frequency and fullness, surface cold and clammy, pupils contracted or dilated, loss of consciousness and paralysis of one or more parts.

parts of the body, paralysis increases, and a mechanical grasping at one spot on the side of the head. In some cases there is a partial recovery, leaving a state of mental imbecility. In others, there appears to be an entire recovery; but in all such cases it may be expected to return again on some trifling provocation.

TREATMENT OF APOPLEXY.—1. *Of the Premonitory Symptoms.*—In all cases where any warning symptoms exist, all possible precautions should be taken to prevent an attack; but all advice should be directed to the friends rather than to the patient himself. Every symptom of disorder of the digestive organs should be attended to; the general health should be promoted in every possible way. All habits of intemperance in eating and drinking should be cautiously but effectually changed; the patient should take much exercise in the open air, with plenty of simple but nutritious food. The amount of stimulants should be lessened, but they should not at first be entirely prohibited.

All mental excitement should be avoided; bronchial affections should be promptly treated; congestion of the lungs which delays the return of blood from the brain to the right side of the heart, must be immediately removed by proper measures. The act of coughing may excite apoplectic effusion. Watson says he has seen fatal apoplexy caused by the straining of a person to pull on his boot; and we have witnessed some cases where it originated in very trifling physical exertion. One of these was a strong man of florid complexion, who drank freely, but was not considered as intemperate. While engaged in boring a hole with an auger in a block of wood on the ground, he fell down in an apoplectic stupor from which he could not be aroused. All exercises that especially exert the lungs, as coughing, blowing on wind instruments, loud talking, singing, as well as venereal excesses, depending posture, severe cold, or the suppression of habitual discharges, may, at any moment, provoke an attack of apoplexy.

For the precursory symptoms of apoplexy, and for its incipient stages, the following remedies are recommended: Aconite, Nux-vomica, Coffea, Belladonna, Ipecac., Arnica, Bryonia, Ignatia, Mercurius. The choice of a remedy in an individual case must be made after an accurate review of the symptoms.

2. *Treatment of Sanguineous Apoplexy after the Occurrence of the Attack.*—All tight clothing should be instantly removed, especially from the neck; carry the patient to a cool place, well supplied with fresh air, and place him in a position in which the head is well elevated. If poison be suspected, remove it by the use of an active emetic, sulphate of zinc, or the stomach pump, and antidote the poison suspected, using strong coffee for opium, (*Hartman*, Vol. IV., p. 4,) and also for Belladonna.

Belladonna.—Profound coma; stertorous respiration; face swollen, bluish, dark-red; spasmodic movements of the lips; distention of the veins of the head and neck; visible throbbing of the carotid and temporal arteries; dilatation of the pupils; injection of the conjunctiva; grinding of the teeth; suppression or involuntary discharge of urine; paralysis and immobility of one limb or one side of the body.

If the patient is sufficiently conscious to note his sensations, *Belladonna* will cover confusion of the senses; vertigo; throbbing pains in the head; loss of memory; heaviness and pressure in the head; cramp-like pains in the face and limbs; dimness of sight; double vision; deep-seated pain in the orbits; roaring in the ears; hardness of hearing; loss of taste, or putrid taste; constipation; lameness and weakness of the extremities; painful sensitiveness of the whole surface to the touch; drowsiness, disturbed sleep; great sensitiveness to cold; aggravation of the pains by movement or by contact; despondency; dejection of spirits; apathy; irritability.

Paleness of the face; *drowsiness with loss of consciousness* and of speech, or with convulsive movements of the limbs and muscles of the face; paralysis of the limbs, especially of the right side; *mouth drawn to one side*; paralysis of the tongue; salivation; *difficult or impossible deglutition*; loss of sight, *dilated pupils*; red and prominent eyes; glistening eyes; *muscae volitantes*; double vision; redness and bloatedness of the face; *vertigo with nausea and dullness of mind*; stertorous breathing; fearful illusions of the senses; loss of consciousness with convulsions of the extremities; aching pain in the forehead as if the head would burst; *Belladonna* is the principal remedy shortly after an attack characterized by speechlessness, loss of motion and sensation, stupor and paralysis. It is useful in almost every form of apoplexy. It antidotes the apoplectic effects of Mercury, Opium, Valerian, Secale-cornutum, &c. (*Jahr, Hartmann, Hull.*)

ADMINISTRATION.—In grave cases, a drop of the second potency may be given every half hour, or every hour, until the effect is manifest. When there is only a predisposition to the malady, a drop once in six or eight hours will suffice.

Hartmann, who says that he has succeeded in curing many cases of apoplexy with homœopathic remedies, uses *Aconite* in every variety of apoplexy, particularly when plethora and an excited circulation are conspicuous phenomena, or when the nervous system is very much irritated. (*On Chronic Diseases*, Vol. IV., p. 7.) It is peculiarly appropriate in those cases of "sanguine temperament, robust constitution," in which is displayed, "great agitation, which nothing can calm, tossing from side to side, impatience, and mental excitement arising from fear or indignation." (*Hahnemann*.) In all cases of "hyper-

excitation of the nervous system," the use of Aconite renders the action of succeeding remedies more favorable.

Aconite is indicated in the treatment of apoplexy by the following symptoms: A sensation of paralytic weakness in the limbs; congestion or sudden rush of blood to the head; buzzing in the ears; deadly paleness of countenance; vertigo, with sensation of intoxication, or dizziness of the head; pain in the head and vomiting; piercing and throbbing pain in the forehead and temples; heat and redness of the face; eyes red, sparkling, convulsed, prominent; they look fixed, and the pupils are dilated; roaring in the ears; the face is swollen, red, and hot; paralysis of the tongue; trembling, stammering speech; difficulty of swallowing.

Coffea.—Apoplexy in nervous persons, caused by violent emotions. In sanguineous apoplexy it acts only as a palliative. Suitable for persons habitually nervous, sad, and disposed to complain, affected by sleeplessness from excessive agitation of mind; frequent flushes of heat in the face; dizziness, heaviness of the head.

Opium.—Hartmann (Vol. IV., p. 8) says, Opium is available in apoplexy when the active power of the sensorium sinks to such an extent that the proper remedy cannot act upon the disease. A single dose of Opium sometimes restores the irritability. It is appropriate in drunkards and in old persons. *Symptoms*: Stupor, coma, stertorous breathing; lower jaw depressed; inability to be roused; inability to answer questions; full, slow pulse; anxious breathing, with frequent breaking out in profuse perspiration; cold sweat on the face; the head falls on the chest; temporal arteries throb visibly. Opium is proper when stupor, vertigo, or heaviness of the head precede the attack, and when there is humming in the ears, imperfect hearing, fixed look; sleeplessness; anxious dreams; great tendency to sleep. *After and during the attack*: Tetanic rigidity of the body; face red, hot, bloated; head hot and covered with perspiration; convulsive movements, trembling of arms and legs; foam at the mouth. Face red, bloated and swollen, or pale and sunken; expression of countenance stupid and besotted; distortion of the mouth; dropping of the upper lip; eyes half closed, pupils dilated, and insensible to light; irregular and snoring respiration; profound coma, with stertorous and rattling respiration; convulsive and spasmodic motions; bluish color of the lips and nails; general relaxation of the muscles; coldness of the extremities, with heat in the head. Stupidity, imbecility, and dullness of the mental faculties and senses; drowsiness; vertigo; giddiness; buzzing in the ears; heaviness, pressure, and tightness in the head; congestion of blood to the head; visions; dryness of the mouth; paralysis of the muscles of the throat and tongue; constipation, involuntary stools, suppression of urine; numbness and insensibility; weakness; languor;

general diminution of power throughout the organism. High spirits, succeeded by depression; calmness; agreeable reflections; pleasant fancies; taciturnity; courage; confidence; contempt of danger; and, finally, by coma, with stertorous breathing.

Administration.—A drop of the third dilution in water or on sugar and repeated according to the urgency of the case.

Rhus-toxicodendron and *Laurocerasus* are applicable in some cases of a dynamic apoplexy, after *Belladonna* or *Opium*. *Rhus* is specific for the secondary effects which have not been removed by the last-named medicines, like great prostration; paroxysms of fainting; bruised pains in the affected parts; numbness; stiffness; paralysis; cramps; great sensitiveness to cold air; tingling and twitching in the limbs; irresistible drowsiness.

Administration.—A drop of the third dilution once in six or eight hours.

In the adynamic apoplexy of old people, *Phosphorus* is a valuable remedy. The symptoms which point to its use, are: general appearance of debility and prostration; face pale and sickly; eyes sunken; torpor of the mental and physical powers; coldness; paralytic weakness; tremor of the hands, and feeble pulse.

Coffea, *Ignatia*, and *Nux-vomica* may be given for the purpose of removing the premonitory symptoms of adynamic apoplexy. The vapor of the nitrous oxyd gas may be inhaled with advantage in cases which are characterized at the commencement by great exhilaration, increase of muscular force, constant desire for locomotion, and succeeded by profound sleep, or sleep disturbed by visions. This remedy should be so administered as to produce a decided impression.

Laurocerasus.—Sudden attack of apoplexy in which the patient falls suddenly without any precursive symptom, as if he had taken a large dose of Prussic-acid; in such cases, *Laurocerasus* will often restore the vital action. A deep sleep may follow, which becomes lighter. Reason may be long in returning.

Hyoscyamus.—The patient falls suddenly with a violent shriek, convulsive movements, stertorous breathing. Suitable for nervous females in whom the paroxysm is preceded by languor, lassitude, and transitory loss of consciousness; disposition to sleep too often and too long-continued; starting up from sleep in a fright; during the sleep the pulse becomes remarkably small and feeble, and the whole body covered with profuse sweat; frequent attacks of vertigo; illusions of sight; concussive jerks in the brain; face livid; features distorted; mind sad, peevish. Subsultus tendinum; hemiplegia; staring, distorted, red, sparkling eyes, convulsively moved and protruded from their sockets.

Arnica.—Apoplexy from mechanical injuries. Sanguineous and

serous apoplexy with rupture of blood-vessels. Applicable in cases of persons of sanguineous temperament, red face, plethoric. *Symptoms*: pulse full and strong; *paralysis of the limbs*, especially on the left side; drowsiness; loss of consciousness; murmuring complaint; evacuations passed involuntarily.

Mercury.—*Mercurius-solubilis*—Is appropriate in almost every variety of apoplexy; may be used after Belladonna; especially suitable for serous apoplexy.

Mercurius and *Belladonna* have cured a form of disease resembling apoplexy, and which arises from the use of coffee and wine. *Symptoms*: distensive pain as if the head needs to be pressed upon; orgasm of blood to the brain; throbbing as seen in plethoric persons; constant uneasiness and heaviness of the limbs; languor and lassitude from the least exertion; turgid state of the eye; frequent paroxysms of loss of sight; vertigo; buzzing in the ears. (*Hartmann*, Vol. IV., page 10.)

Plumbum.—May follow Opium, Belladonna, or *Hyoscyamus*. *Symptoms*: Languor, lassitude, drowsiness, indolence; attacks of loss of consciousness; feeble and slow pulse; throbbing in the whole body, especially the neck and abdomen; face hot; general sensitiveness, vertigo, and dullness of the head.

Veratrum.—Coldness of the whole body; sudden prostration and collapse; distorted and protruded eyes as in persons suffocated; constant flow of saliva; disfigured and cold countenance, as of a dead person; flabby muscles, locked jaws; imperceptible breathing.

Ipecac.—The principal remedy in gastric apoplexy, or that form arising from overloading the stomach by rich food, as pork and pastry. *Precursory symptoms*: Restless sleep disturbed by frequent startings; irritable mood; ineffectual urging to vomit.

After Ipecac., Pulsatilla, Nux-vomica, Ignatia, and Antimonials may be proper.

Hydrocyanic-acid.—In cases of poisoning by bitter almonds in small doses, vertigo comes on almost instantly. The features are spasmically distorted, the eyes fixed and turned upwards; pupils immovable; breathing stertorous; pulse reduced to thirty per minute; the breathing exhaling the odor of bitter almonds; and death generally takes place in ten minutes. A woman gave some to a child to cure worms; it produced colic, swelling of the abdomen, vertigo, locked-jaw, frothing at the mouth, convulsions, insensibility, and death in two hours.

A drop of the concentrated acid killed a cat in five minutes by dropping it on the tongue. A single bitter almond produces violent symptoms in some persons. In larger quantities they cause nausea, vomiting, diarrhoea; in some there is an eruption like urticaria. A laborer took a quantity of them and dropped down insensible; pulse impercep-

breath exhaled the almond odor, the remains were found in the stomach. A gentleman swallowed some of the oil. His servant found him with his features spasmodically contracted, the breathing hurried and convulsed; twenty minutes later the physician found him insensible; pupils immovable; breathing stertorous; pulse only thirty per minute; in ten minutes more he died.

The *post-mortem* appearances after poisoning from Prussic-acid or any of the vegetable products that contain it, are all the same. The appearances depend on the period at which the inspection is made. After two or three days, no traces of the poison can be detected if the body has been exposed to the air; the decomposition of the poison is hastened by the commencement of putrefaction. The effects observed are: the eyes remain glistening, and the features are as composed as those of a living person; which appearance continues eight or ten hours, and the pupil dilates or contracts under the influence of light, in the case of a physician this continued ten hours. This same glistening of the eyes has been noticed in cases of death by asphyxia from carbonic-acid gas. Dr. Christison saw it in a woman who died of cholera, continuing for six hours. There is also a peculiar brilliancy of the eye in persons poisoned by strychnine, and also after death from an apoplectic paroxysm.

External Appearances.—The spine is generally stiff, and the abdomen drawn in. On opening the body the odor of Prussic-acid is not always perceptible. When it is obvious it pervades every cavity, and is often perceptible in the blood.

Cuprum.—*Case by Dr. Kissel.*—A man, aged sixty-three, had two years ago a threatening of apoplexy. He stepped on a stool to feed a bird in a cage, but found he could not bring the other foot from the ground; he became giddy, deadly pale, and was carried to bed. For this he was bled. A similar attack afterwards occurred. The whole condition was from that time changed. He sat nearly the whole day in an easy chair and slept, and afterwards suffered from violent trembling.

Feb. 8, 1860. He sat in the inn with his head lying on his arm on the table, looking as if asleep. When the police tried to wake him they found his right arm paralyzed. Medical treatment including purgatives and Arnica did not improve him.

Feb. 11. He was in an unconscious state, was speechless; his mouth drawn to the left side; right arm completely paralyzed, without motion or feeling; pinching the leg made him start a little; face pale and sunken; breath rattling; pulse hard, unfrequent, slow; occasionally suspending a beat; constipation continued; he voided urine involuntarily; swallowing very difficult. Give Acet-cuprum, $3\frac{1}{2}$ per day.

Feb. 12. Swallowing improved with each spoonful taken. He looks about him observing everything. The lower extremities twitching on

being pinched slightly. The upper extremity also, more severely; urine dark orange, clear, acid, but depositing a sediment like brick dust. No stool had occurred since the 8th. Cuprum repeated.

Feb. 13. Passed, after a clyster, considerable portion of blackish faeces, horribly fetid; he is becoming livelier, has taken soup with relish. He attempts to speak, and has some sensibility in the arm, and can move the leg. Has cough, raising thick clots of mucus; respires with more ease. Urine less dark, still turbid, depositing the same sediment.

Repeat the Cuprum. Drew his weak arm out of bed, looked at it and the other, touched it and then began to weep violently.

Feb. 14. He tries constantly to speak, but articulates only short words; can hold his arm free when it is raised, bend the elbow and wrist a little, but it trembles much. Large clots of mucus continually thrown up by the cough; can pass from the bed to the sofa with support. Urine dark gold color, clear and acid. Repeat the Cuprum. 15th. Walks twice daily from the bed to the sofa without his foot slipping. The mobility of the arm improves, but the speech gets on slowly.

He stills throws up much mucus continually. The urine is brighter; tongue clean; appetite good. He could not yet put out his tongue. Repeat Cuprum.

The medicine was continued, and up to the 19th the urine was straw color and clear; by the 23d the cough and expectoration had ceased also. He now kept out of bed the greater part of the day. In the first days of March he began to walk about in the house; and from March 17th he went out in the open air a half hour or hour daily. In his walk nothing morbid is seen; but his arm trembles on the least stretching, and his speech is no longer fluent. (*Mayer.*)

M. Troussseau* says his treatment of apoplexy consists in doing nothing. He says he regards the cerebral hemorrhage as a fact accomplished; and he asks, of what use can the lancet, cups, or purges be, in presence of a foreign clot of blood?

Instead of bleeding a man who has just fallen from an apoplectic fit, M. Troussseau encourages him to sit up, to eat, and finds more of his patients recover, and faster than when he used to bleed and purge them and keep them in bed. He cites remarkable cases where bleeding seemed to have suddenly determined the apoplectic attacks against which it had been employed as a prophylactic. In this idea he is in full accord with the teachings of Cruveilhier, (*Dict. de Med. et de Chir. Prat.*, p. 259,) of Andral (*Clin. Med. t. IV.*, p. 499), of Ch. Robin and Béraud, who cite bleedings as among the causes of apoplexy.

Official science of the present day denounces bleeding also in in-

* Troussseau, *Gaz des Hop.*, 1857, p. 332.

flammatory affections, even in the most decided phlegmasias, which since the works of Andral, Garvarret, Becquerel, Rodier, are no longer attributed to the richness or plasticity of the blood. On the contrary, the idea prevails that "phlegmasias chiefly attack the debilitated."

"That weakness and globular anaemia predispose to them."

"That the more blood such patients lose, the more liable they are to inflammation."

6. COMA.—STUPOR.

This name is applied to a state of the brain which is a symptom of many diseases. We recapitulate some of them in connection with their causes.

Importance of Free Respiration.—In certain states of the brain free and perfect respiration is indispensable to recovery of health.

Of these are: 1. *Coma*, from injury or disease, sanguinous or serous. Cases from cerebral injury are given in all the books, which show that death generally takes place by apnoea. In most of these life can be saved even in those almost hopeless.

2. *Narcotism*.—The greater the insensibility in narcotic coma the more respiration is affected; the more, therefore, it requires to be watched. Coma and narcotism both kill by the lungs. They differ, however: 1. In the apnoea of coma death is generally (at least primarily) due to the cessation of respiratory action—not to muscular paralysis—but to lung paralysis, evinced by extreme and rapid congestion of the lungs, accompanied by rapid effusion into the pulmonary air cells and bronchial tubes. The death is apnoea by effusion, unless it can be warded off. The treatment for the apnoea of coma is that which will remove congestion of the lungs and prevent its further formation. But far more important is the *prone* position advised by Dr. Marshall Hall, by which an immense amount of bronchial effusion may be got rid of. Without the prone position the bronchial effusion may so accumulate that the patient may, in reality, die of narcotism, from non-eliminated carbonic acid gas. Artificial respiration may not be necessary.

2. In the apnoea of narcotism there is neither the rapid effusion nor the great congestion of coma; but, if death ensues, it is chiefly from musculo-respiratory paralysis. The pulmonary congestion is less than in cases of coma, for the narcotic influence diminishes the strength and frequency of the cardiac pulsations, which are unrestrained in coma.

In the *Treatment* of narcotic apnoea, no depletory measures should be resorted to, nor is the placing in the prone position necessary to remove the effusion, but it is chiefly necessary on account of the lingual

páralysis. Artificial respiration is here of great value, but if the position of the tongue be neglected it may cause suffocation.

Tartar-emetic.—The coma that occurs in the height of febrile paroxysms, especially the violent ephemeral attacks to which young children are subject; there is often vomiting with the fever, and irritation from dentition.

Opium.—The effects of Opium vary according to the quantity given. In small doses it sensibly excites the nervous and vascular systems. The cerebral functions in particular are rendered more active and energetic. Volition is stronger and more prompt, and a temporary vigor is felt in all the voluntary organs of the body. Vivacity, joyfulness, courage, ambition; indifference or rather defiance to the ills of life; in short, all those delightful feelings which spring from a conscious energy of mental and bodily power, and an absence from painful or unpleasant sensations arise from a dose of Opium of the necessary size.

If the quantity be increased, the narcotic effect will be more conspicuous. The blood is congested in the vessels of the brain; the mind is unsettled and incoherent; voluntary motion is performed with less freedom; sensation is diminished; the eyes are suffused and vision is indistinct. Finally, the voluntary motions are suspended. The sensorium commune ceases to exercise control over the animal functions of the system; and profound and heavy sleep weighs down every conscious faculty. If the dose has been large the sleep becomes more and more lethargic; the sensorial power is rapidly impaired, in consequence of which respiration is imperfectly performed, the blood ceases to receive its due proportion of oxygen in the lungs, which tends still further to diminish the cerebral functions; until, finally, they stop altogether; and, with them all other movements of the animal system.

Symptoms produced by Excessive Doses.—A robust, muscular young lady, aged eighteen, took half an ounce of solid Opium. She was found sitting in a chair; head thrown back, face pale and ghastly; breathing difficult and stertorous, pulse 90, small and feeble. She now had forced down her throat twenty-seven grains of Tartar-emetic; warm water in large quantities. She next took Sulphate of Zinc, thirty grains; then Ipecac, ground mustard, titillation of the fauces with a feather, without having emesis excited. A stomach pump was then employed, and the stomach emptied eight hours after the taking of the Opium. Then strong coffee was thrown into the stomach and withdrawn. She was dragged about the room and kept in agitation all night; she took strong coffee, carbonate of ammonia, &c. When she could no longer be roused, slapped with cloths wet with cold water till the stupor became so profound that no effect was produced by any

effort. External irritation was then tried. Three gallons of hot water was prepared by dissolving in it one pound of table salt. This was used by means of rough stove brushes, kept constantly wet in the brine and applied vigorously to the skin. In an hour the rubbing caused smarting of the skin, but it was continued till the blood started after the brush, and the patient complained bitterly of the cruelty of her attendants. She drank a pint of strong coffee and soon partially recovered. But there was again relapse, for which stimulants were used to the nostrils; after vomiting there was return to consciousness. More coffee was given; final, but slow recovery.

Opium, by habitual use, loses its power to such an extent that incredible quantities may be taken, and it may produce such a torpor of the stomach as to render it insensible to every other agent. Lord Elgin and his party saw, at Constantinople, in 1815, an extraordinary man, more than one hundred years of age, who had acquired celebrity by eating Corrosive-sublimate. When young, he accustomed himself to swallow pills of Opium. After long practice he found it had lost its power. He afterwards tried Corrosive-sublimate, and for thirty years he was in the habit of eating about sixty grains per day. He declared that this poison had no effect but to produce the most delightful sensations. Never, since the days of Mithridates, have his experiments been surpassed.

Ordinary Symptoms produced by Habitual Use of Opium.—When not under the influence of his habitual narcotic, the habitual Opium-taker shows every mark of physical and mental imbecility. He is timid, low-spirited and pale; he has a tormenting anxiety of feeling; disinclined and unfit for mental or bodily exertion; he is peevish, and feels pain in different parts; his extremities are cold; he suffers from indigestion; cannot sleep; and feels a tremor over the whole body.

Opium is more abused in the diseases of children than any other remedy. The mortality of infants from injudicious use of anodynes is enormous. Nothing can be more uncertain than the effect of Opium upon infants. Very small doses are often fatal. Harris called public attention to the practice more than two centuries ago, and says that "it swelled the number of the dead and rid those who had the care of infants of further trouble." In one case, one grain of Dover's Powder destroyed a child's life; and in another one-sixth of a grain of Opium produced stupor for two days; a half drop of Lau lanum narcotized a child. A tea spoonful of a mixture of one drop of Laudanum to an ounce of simple syrup narcotized a new-born infant.

Symptoms.—An infant stupefied with Opium for six, twelve, or twenty-four hours breathes laboriously; there is determination of blood to the head, or predisposition to hydrocephalus; the child cannot be waked to take food; absorption goes on, emaciation is rapid; debility

and death are the ordinary results. Infants often narcotized are feeble; do not grow, and generally die of some disease before the fifth year. Opium produces indigestion as in adults.

Case.—In a fever, attended with coma, the patient lay extended deprived of speech, the eyes open, the limbs stiff, the pulse small and intermittent, respiration disturbed and stertorous, C. L. Hoffmann saw no remedy but Opium do any good. General experience shows that these symptoms are all produced by Opium. Several authors report cases of lethargic fevers with Opium. De Meza effected a cure in one case, which had resisted all other means. (*Magaz. Therap.*) Hufeland cured one that had lasted for several days. (*Hufeland.*)

TREATMENT of Poisoning by *Opium*, see p. 651.

Sulphate of Zinc—White Vitriol.—This salt, in its crystallized state, is composed of Sulphuric-acid 1, equivalent = 40; Zinc 1, = 42; Water 7, equivalent = 63. *Common Effects.*—In doses of half a grain to two grains, it acts as an astringent tonic. In doses of from ten to thirty grains it is strongly emetic. Being more prompt than any other emetic it is preferred for all those cases where poisons have been swallowed and a speedy operation is required. As a poison, in an over-dose, it causes "pale and sunken countenance; cold extremities; dimness of appearance of the eyes; convulsive pulse." These symptoms were produced in a young lady who took two ounces of the substance. This extreme prostration would be followed by inflammation, but vomiting soon ensued; the most of the vitriol was thrown up, and the balance was decomposed by means of fixed alkali, diluted with sugar water; the vomiting then ceased, and she was in two hours free from alarming symptoms. (*Orfila.*) Where vomiting is desirable, and there is insensibility and torpor of the stomach, as in poisoning by Opium, White Vitriol is the best emetic. In such cases it is more likely to act than Tartar-emetic, and less injurious.

Coffee.—After free vomiting, and the poison is known to be Opium, Laudanum, Prusic-acid, or any vegetable substance containing it, (as bitter almonds, peach kernels, &c.), Stramonium, poisonous Mushrooms, Belladonna, Colocynth, Valerian, Conium, Chamomile-tea, Antimonial-wine, Phosphorus, Phosphoric-acid, Nux-vomica or Strychnine; in all of these cases Coffee is an essential remedy. See Vol. I., p. 514.

Camphor.—This is a good remedy for poisoning by vegetable substances; sharp, acrid, burning poisons, which cause inflammation and redness; in all cases of poisoning in which there are: vomiting and diarrhoea; the patient cold as ice, almost senseless; when poisonous insects, as cantharides, have been swallowed or got into the eye; Camphor may be given, as recommended under cholera. In cases of poisoning from poisoned honey; swellings, caused by hairy caterpillars; alarming symptoms caused by the sting of insects; when stran-

gury gives rise to suspicion of poisoning by Cantharides, Camphor or Bromine is the best remedy.

7. ANÆMIC COMA.—HYDROCEPHALOID.

If cerebral anaemia be allowed to continue for a long period, it will occasionally terminate in hydrocephalus, and also in the white softening called ramolissement.

Hydrocephalus may be : 1. anæmic ; 2. inflammatory.

1. Dr. Marshall Hall first showed the resemblance between the comatose condition from exhaustion, and that occasioned by inflammation. The first he called "hydrocephaloid affection of infants arising from exhaustion." It commonly results from diarrhoea, from bad food, or long-continued use of purgatives, or from bleeding.

The *first stage* is that of irritability ; the second of torpor. In the former there appears a feeble attempt at reaction ; in the latter the nervous power appears more prostrate.

SYMPTOMS.—The infant becomes irritable, restless, feverish ; the face flushed, the surface hot, pulse frequent ; undue sensitiveness of the nerves ; starting on being touched, or from sudden noise ; sighing or moaning during sleep ; screaming ; bowels flatulent and loose ; fatal exhaustion. The countenance then becomes pale, and the cheeks cool or cold ; the eyes are half closed ; eyes fixed and contracted by any object placed before them ; the pupils unmoved on the approach of light ; the breathing, from being quick becomes irregular and interrupted by sighs ; the voice becomes husky, and there is sometimes a husky, teasing cough ; eventually the strength is subdued and exhausted.

DIAGNOSIS.—The coma resembles that which is seen in the last stage of other exhausting diseases, coming on a considerable time before death, and while the pulse is still distinctly felt. Some children lie for a day or two in this kind of stupor and recover under the use of wine and good nourishment. It is often hard to distinguish it from that accompanying diseases of the brain. It attacks them after some continuance of exhausting diseases, such as tedious or neglected diarrhoea ; and the patients lie in a state of insensibility, the pupils dilated, the eyes open and insensible, the face pale and the pulse feeble. It may continue for a day or two, and terminate in death or recovery.

This affection appears to correspond with the *apoplexia ex inanitione* of the older writers. It differs from syncope by its coming on gradually and in its continuing a considerable time ; perhaps a day or two ; and is not like syncope induced by sudden and temporary causes, but by causes of gradual exhaustion, going on for a considerable time. It differs from mere exhaustion in the complete abolition of sense and

motion, while the pulse can be felt distinctly, and there is in some cases considerable strength. Cases have occurred in adults, but they are less common than in children. This state in infants is one of *pure coma*, and only differs in appearance from that seen in the very last stage of hydrocephalus in "the child lying with the eyes open, or half open, the pupils dilated, the face pale." The expression is one of *coma* rather than of sinking. "It came on after diarrhoea and not with any symptoms affecting the head."

For the purpose of arresting the exhaustive diarrhoea the measures recommended under *cholera infantum* must be employed. The diet and remedies must be essentially the same in both diseases.

For the persistent coma, Opium, Wine and good nutritious, easily digested food are sufficient. There is in these cases a real congestion of the brain, though the symptoms be those of exhaustion. The symptoms before death and effusion found after it in the brain show this to be true. The little blood remaining stagnates within the cranium and other weak portions of the organism: hence the extremities and surface are bloodless, and must be kept warm by flannel and frictions; the child must be kept in a reclining posture, never erect; the room must be well aired.

Cases by Dr. Hall.—1. A girl, two years old, small, delicate, has anæmic appearance, coma, lies languidly dozing; pulse weak not very quick; takes no nourishment. Six leeches were applied to her head which bled freely and made her much worse in the evening. She was then deadly pale; scarcely any pulse; skin cold; pupils dilated, motionless when exposed to light; no squinting; seemed not to see a watch held before her. Circulation of the brain too languid to support the sensibility of the retina. She was treated only by good food. For several days her wasted features grew sharp; she became more fretful, uttered a faint squeaking cry; eye-balls sunk in the sockets like those of a corpse dead for a month; skin cool, pulse tremulous, nearly imperceptible. She revived slightly for a few days, recovered sight; lived a week and died. Post-mortem showed only a little more serum than usual in the ventricles.

2. In a similar case, ten months old, there was the same unwillingness to hold up the head, the same drowsiness, languor, absence of heat and fever. The child had been well till weaned two months ago, but has since declined. It was fed with better food, taking one and a half pints of asses milk in twenty-four hours, and ten minims of spirit of Ammonia in four hours. Treatment continued two or three days, the child recovered.

APPARENT DEATH FROM LIGHTNING.—A person rendered insensible by a stroke of lightning, should be placed in a current of cool fresh

air. Fresh water should then be freely dashed over his face, neck and chest.

Hering recommends that the patient be placed in a half-recumbent, half-sitting posture with the face turned towards the sun. Then cover him entirely (except the face,) with newly dug earth until there are signs of returning animation; after which Nux-vomica should be given by placing a few pellets on his tongue, and repeating the dose every half hour.

8. PARALYSIS.—PALSY.

Paralysis is characterized by a partial or total loss of voluntary motion or of sensation. In some cases both sensation and voluntary motion are destroyed. These symptoms occur without coma, loss of consciousness, or much derangement of the intellectual powers, if we except an occasional weakness of memory. It may follow apoplexy, or arise from disease of the spinal marrow. When it succeeds to an apoplectic attack, there is usually a paralysis of side of the body, which is termed hemiplegia. Palsy of the lower part of the body, or paraplegia, may arise from disease of the brain or spinal marrow; though most commonly the former organ is the seat of the affection. Partial or local palsy affects some particular part of the body, as an arm, wrist, or the face. The muscles of the face are most often affected, this variety may arise from the pressure of a tumor, from mechanical injury or from disease of the *portio-dura*. We sometimes see a palsied state of the wrists which has been termed *lead palsy* from the supposition that it owes its origin to the absorption of lead into the system. This indeed is often the cause of paralysis; but in many instances we have been unable to trace the cause of the malady to this drug; and we have in several instances known it to follow long exposure to cold and wet in the act of driving. In three cases this result occurred in individuals in perfect health. In one instance the exposure took place after a course of blue pills.

PATHOLOGY.—Voluntary muscular motion is usually supposed to "take place only in consequence of a stimulus imparted to the muscular fibre through the medium of the nerves, and paralysis of motion or paralysed innervation occurs generally, *not* from defect in the muscular tissue itself, but because of an interuption of this stimulus."

THE CAUSE, of this interruption of the passage of nervous impulse may be :

1. "Mechanical, as the pressure of a clot or effusion, with or without effusion of serum into any of the cavities, concussion from blows," &c.
2. Physiological; as the cutting off the supply of nutrition from chronic inflammation of the membranes, thus interfering with the capillary circulation in the nervous substance;"

3. "Disease of the nervous tissue itself, as softening, tubercular deposits :"

4. Both the mechanical and physical causes combined.

DIAGNOSIS.—When there is only a loss of voluntary motion, the part affected wastes away, and becomes soft from want of use, while sensation may remain natural, or, as sometimes happens, there will be a morbid sensibility, or a bruised and painful feeling in the part affected. We have known this morbid sensibility in two or three cases to be exceedingly troublesome, rendering it impossible for the patient to move, or be moved, without great pain. In some cases, there is an entire loss of sensation, as well as voluntary motion. Often, when the sensibility of the part is only partially destroyed, formication is experienced in the parts affected.

The loss of muscular power and of sensation, will in all instances bear a direct ratio to the extent and severity of the original affection and the part affected.

Examine the condition of all the muscles of the paralyzed limbs. Flex the fore-arm upon the arm and the leg upon the thigh and carefully ascertain which, if any, of the muscles offer resistance to your efforts and the degree of that resistance. Sometimes the biceps alone resists, sometimes the triceps; flaccidity, slight resistance, and absolute rigidity denote different states of the brain.

The perfectly flaccid condition of the muscles of the palsied limbs denotes cerebral lesion distinctly atrophic in its nature: the opposite or inflammatory, of the low kind and one in which there is a tendency to wasting in which the vital powers are *below par*.

The resistive state of the paralyzed muscles shows that the cerebral lesion is of an irritative kind: perhaps the small apoplectic clot with laceration by the effused blood of some of the healthy brain substance immediately adjoining it.

When the palsied muscles are rigid, hard and almost in a tetanic condition the brain lesion is of a more distinctly irritative kind. These are the cases formerly considered best adapted to bleeding; and especially for the specific effect of Mercury. When the muscles are flaccid these measures are still more immediately fatal.

PATHOLOGY.—If irritation falls upon the vaso-motor nerves of the motor tract of the crano-spinal axis, "we have reflex paralysis; as the frequently-observed palsy in connexion with disease of the kidneys and bladder, the paralysis of children from dental or intestinal irritation, loss of power over certain muscles of the face from neuralgia of the fifth, or pair of muscles of the leg from sciatica, &c. (Dr. Hughes.)

Distinctive Characters of this reflex Paralysis.—Dr. Brown-Séquard thus gives them: "1. The supposed cause has always preceded the paralysis. 2. The changes in the intensity of the cause h-

usually been accompanied with corresponding changes in the paralytic symptoms. 3. The usual remedies against paralysis have proved useless. 4. The affection, in many instances, has been speedily cured after the cessation of the irritating cause. 5. There was no visible alteration of the nervous centres in several cases in which autopsy was made."

The transmission of the orders of the will is effected mainly through the antero-lateral columns; and a transverse section of these always causes paralysis of the parts below. They convey the impulse of volition, not directly into the motor nerves, but to the cells of the anterior horns, which send out processes in a transverse direction to join them.

The antero-lateral columns have been less perfectly understood by Sir Charles Bell and his successors. Dr. Brown-Sequard, by numerous vivisections and pathological researches, has ascertained what seems to be the entire office of this portion of the medulla spinalis. He shows that section or disease of the posterior columns alone—the posterior roots being unaffected—causes no anaesthesia, but often even the reverse, in the parts below and behind; while on the other hand disease or injury limited to the gray matter entirely deprives the corresponding parts of sensibility. It is therefore concluded that the conductors of sensitive impressions run to the brain in the central gray matter.

Dr. Brown-Sequard has also discovered that "while the motor fibres cross over in the medulla oblongata, those in the spine make their decussation almost immediately upon their entrance into the gray matter; so that disease or injury, limited to one lateral half of the cord, will cause paralysis of the same side of the body, but anaesthesia of the opposite side." He also shows that in some instances there exist more than one kind of sensibility, while others have been destroyed by disease. Thus, in one case, touching, pinching, pricking, and the passage of a powerful electric current were unfelt; but there was sensibility to cold and to tickling. In another, there was no sensation produced by heat, though contact was sensibly felt. In the *North American Journal of Homœopathy*, Vol. VI., a case of poisoning by Arsenic is reported in which, though both arms and legs were paralyzed as to motion and common sensibility, the paralyzed part remained acutely sensitive to cold.

Effect of loss of Nervous Influence upon Organic Functions.—The proper vital energies of a paralyzed part are not generally interfered with by the defective nervous supply; burns, fractures and wounds, are observed to heal as rapidly in paralyzed as in other parts. It is with the tissues and organs generally as with the muscles; their own independent vital contractility is not impaired by cutting off their nervous supply; but their sole normal stimulus to action being absent

they lie idle and waste from inaction. In general the tissues being always in action require no stimulus ; but the glands, being intermittent in their activity, can only be roused to energy by an appropriate excitation. If this excitation be, as with the muscles, through the medium of nerves, it is evident that section of their nerves will paralyze them as effectually as it would in the case of muscles. But if as with the glands of the stomach the normal stimulus be immediate, then abstraction of nervous influence will not, after the first shock is over, permanently injure their activity. If the pneumogastric be divided while the secretion of gastric juice is going on, the process will be suddenly arrested ; but two or three days afterwards, (as ascertained by Dr. John Reid,) it will be resumed, and go on as if nothing had happened. Dr. Reid has compared the relation of the nervous system to the organic functions to that of a rider to his horse. The former can excite by spur and control by bridle, but the motive power is in the animal ; and if the rider falls off, the horse may proceed without impairment of his activity. (*Brit. Journ. Hom.*, 1861, p. 667.)

Paraplegia.—The cases of this form of paralysis are divided by Brown-Sequard into two groups : “ 1. Cases in which there is an increased amount of blood in the spinal cord or its membranes. There are always symptoms of irritation, convulsions, cramps, twitchings, erection of the penis, from irritation of the motor tracts ; formication, itching, pricking, and other pains ; abnormal feelings of cold or heat, of tightness, pressure, &c., from irritation of sensory tracts ; diminution of temperature of the paralyzed limbs, wasting of muscles, œdema, bed-sores, alkaline urine, &c., from irritation of the ganglionic fibres. 2. Cases unaccompanied by any of these symptoms of irritation. In these there is a diminished amount of blood in the cord. The former are cases of inflammation or congestion ; the latter are cases of white softening, or of reflex paralysis. In the former only those remedies must be used [allopathically] which diminish the amount of blood in the cord ; in the latter those remedies which increase it.”

Hemiplegia from White Softening of the Brain.—Causes.—White softening of the brain depends on any condition which cuts off from the brain or a part of it a normal supply of blood. In one case, two days after application of a ligature to the common carotid artery, the patient was suddenly seized with hemiplegia of the side opposite without loss of consciousness. Dissection showed a state of white softening of the cerebral hemisphere of the same side as that of the carotid tied. Dr. Todd gave the history of a case of a large dissecting aneurism of the aorta in which the blood forced its way from a slit in the aorta, splitting up the coats of the innominate to the right common carotid, where it coagulated and formed a plug which obliterated the carotid. The patient, after two days, became hemiplegic of the

opposite side, complaining only of pain in the back and chest; he lived eleven days, and showed on dissection white softening of all the parts of the right hemisphere supplied with blood by the anterior cerebral artery.

Softening is most common at from fifty to eighty years of age. There is generally an atheromatous state of the arteries generally, which consists in the deposition of earthy and fatty matters in the walls of the vessels, causing degeneration of their tunics.

TREATMENT.—We regard *Rhus-tox.* and *Causticum* as our most valuable remedies in ordinary paralysis. We have usually employed these medicines at the second dilution in water.

The following are the principal indications for *Rhus-tox.*:

Causticum.—Paralysis and various forms of facial muscles, organs of speech or deglutition. Numbness, deadness, or tremulous weakness of parts, following rushes of blood.

Next to the above remedies in importance are *Nux-vom.*, *Ruta*, *Cannabis-ind.*, *Agaraeus-musc.*, *Phosphorus*, *Cantharides*, *Plumb.*, *Coeruleus*, *Sulphur*, *Stramonium*, *Belladonna*, *Cocaine*, *Ignatia*, *Arnica*, *Mezereum*.

Belladonna.—Brown-Sequard says: "Not only have I seen the diminution in the calibre of blood-vessels of the pia-mater of the spinal cord, taking place in dogs after they had taken large doses of *Belladonna* or *Ergot of Rye*, but I have also ascertained that the reflex power of the spinal cord (most likely as a contraction of blood-vessels) becomes very much diminished under the influence of these two remedies, which in so doing act just in the opposite way to the action of *Strychnine*."

Belladonna causes contraction of the vessels of the cord, and diminution of the amount of blood; so do *Ergot of Rye* and *Mercury*; but *Mercury* has such a depressing influence that it is better not to employ it except in cases of syphilitic paraplegia. *Strychnine* increases the amount of blood in the cord, and should be used only in cases in which there is no sign of irritation of the cord. *Ammonia*, *Sulphate of Quinine*, *Iron* and *Cod-liver Oil*, are very useful in similar cases. *Iodide of Potassium* is one of the most powerful agents for promoting the absorption of the effused fluids. It may be employed in either class of cases, but it is especially useful in cases of syphilitic paraplegia. (*Dr. Brown-Sequard*, p. 84.)

In all the observations of accurate observers, we find important materials for our homœopathic use of the very remedies on which they have been experimenting. If we employ these remedies according to the homœopathic law, on a principle exactly opposite to that on which they have been allopathically employed, they will be successful; and they must then be used in small doses. They then cure all the symp-

toms which they are able to cause by their *primary action*; and on this principle they are governed by the law of *similia*, and give us their *best* curative effects. There is, however, a *degree of success* in prescribing them according to the recommendations of Brown-Sequard. They, even in *this way*, cure the symptoms which they *secondarily* produce. As this mode of curing diseases requires larger doses than are required to cure appropriate cases according to the Hahnemanian interpretation of the law of cure, it is not *the mode* by which diseases *should be cured*; there may be cases, however, in which cure by *any legitimate mode* is sufficiently satisfactory.

Rhus-Tox may be used in cases of paralysis when there is great sensitiveness to cold air; general debility; tingling or itching in the paralyzed parts; languor; constant desire to be in bed; fainting fits.

Arnica may be given to paralytics with feeble or impaired constitutions, whose pains are aggravated by motion or talking; with painful sensitiveness of the whole body; tremors of the limbs; relaxation, and general debility; hemiplegia. Hahnemann says: "What could have bestowed upon the poison Sumach (as in the case cited by Alderson) the power of curing a paralysis of the lower extremities, attended with weakness of the intellectual organs, if it did not, of itself, evidently possess the faculty of *depressing the muscular powers*, and of acting on the imagination of the patient to such a degree, as to make him believe that he is at the point of death, as in a case witnessed by Zadig."

Nux-vomica.—is suitable for paralysis occurring in sanguine or choleric individuals. The indications for its use are: paralysis, especially of the lower extremities; trembling of the limbs; painful contractive sensations; cramps and spasmodic twitchings in the parts; languor; heaviness and stiffness of the limbs; great sensitiveness to cold air; paralysis which has been induced from abuse of stimulants, coffee or narcotics; or where the predisposing cause has been want of exercise, with severe and protracted mental labor.

Ruta has been highly extolled as a remedy for rheumatic paralysis of the tarsal and carpal joints. It is also indicated in local paralysis, which has followed surgical operations, or which is owing to injury or pressure upon some particular nerve.

Sulphur.—In cases, says Brown-Sequard, "of reflex paraplegia, or white softening of the spinal cord, in which there is no irritation of this nervous centre."

We have found *Sulphur* of eminent service in cases of paralysis, accompanied by great irritability and sensitiveness of the rectum, and causing excruciating pains during every attempt at an alvine evacuation.

We also suggest *Baryta-carb*, *Coccus*, *Lachesis*, *Plumbum*, *Pulsatilla*, *Bryonia*, *Conium-maculatum*.

Administration.—The remedies may be exhibited at from the first to the third attenuations,—a dose once or twice daily.

Phosphorus.—It has been successfully employed by German physicians in paraplegia, “probably in cases in which there is deficiency in the amount of blood in the spinal cord.” As the presence of Phosphorus in nervous matter gives it vitality, so its deficiency may lead to paralysis. It may thus act curatively by replacing the constituent which is deficient.

. *Cantharides.*—Brown-Sequard says he has “tried it without any benefit in cases of paraplegia belonging to the two most distinct forms of this affection. It seems, however, to have been useful in some cases of chronic myelitis.”

Stramonium, Hyoscyamus, Cannabis-indica.—These agents act more or less like Belladonna and Ergot on the blood-vessels of the spinal cord, and they are therefore to be used in those cases of paraplegia in which the amount of blood is increased in that organ. Of course they must be avoided in cases of white softening, or of reflex paraplegia. “Against insomnia in cases of paraplegia, with symptoms of irritation of the spinal cord, *Hyoscyamus* or Indian Hemp should be employed instead of Opium, the use of which is dangerous, as it produces a congestion of the spinal cord.”

Aconite is the most important of all paralytic remedies.

Electricity.—“Have electric and galvanic shocks ever been attended with any other result in such cases than a gradually increasing and finally absolute paralysis and extinction of all muscular and nervous irritability in such limbs?

“An apothecary (in Jever) had a voltaic column, the gradual strokes of which gave temporary relief to persons afflicted with deafness. Soon these shocks caused no more effect, and it was necessary, in order to produce the same results, to render them stronger, until, in their turn, they likewise became efficacious; after this the most powerful shocks would at first excite the patient’s hearing for a short time, but at length leave him quite deaf.”*

Electro-Magnetism.—This is convenient; it furnishes an uninterrupted current, adds an additional beneficial effect in the shape of magnetism. Various styles of these machines are in the market. One of the best “consists of a helix of insulated coarse and fine wire, wound over small, soft iron wire for a temporary magnet, with a horizontal magnet, spring-hammer, and silver-pointed screw, to break the circuit connected with one of Smees’s zinc and platina batteries, to be excited by dilute Sulphuric-acid. These machines give six currents of various powers and effects; they are light, portable, clean, convenient for use.”

* Hahnemann, *Organon*.—Introduction.

There are also magic machines producing frictional electricity by a crank-motion, but they are not very reliable or convenient.

In all of those cases of palsy which have resisted our treatment by internal remedies, we should have recourse to *electro-magnetism*. This agent when properly and perseveringly applied, will often effect cures after all other means have failed. This potent remedy should always, however, be applied under the direction of a judicious physician; for it is an agent capable of doing serious injury when improperly employed.

Paraplegia.—Secale.—Ergot acts, not only on the uterine fibres when in a state of inertia, but also on the bladder, rectum and inferior extremities when these parts are in certain asthenic conditions. Its special primitive action is on the spinal marrow. Dr. Payen, of Aix, says: 1. A man had paraplegia from the effect of a fall on the perineum. Local applications failed to benefit him. He took fifteen grains of Secale at once; twelve hours after the paralyzed limb was agitated by frequent muscular starts, and recovered strength. In six days he began to walk. Ergot continued in doses up to thirty grains produced gastric disturbance and was suspended. In a month he was well. 2. A man, aged thirty, had paraplegia. Other treatment failed. The two lower limbs could support the body, but he could walk but a short distance till he fell. Left leg insensible and atrophied. Bladder has lost part of its contractility. Ergot every morning, fifteen grains, frictions with stimulating liniments along the spine. In eighteen days he recovered. 3. A workman had paraplegia, caused by working in lead. Other treatment failed. Secale succeeded.

PARALYSIS OF THE AUDITORY NERVES.—DEAFNESS.—Causes.—Consanguinity.—M. Boudin, of France, distinguished for his researches on medical statistics, says it is proved by his researches that consanguineous marriages are contracted in France at the rate of 2 per cent.; and that deaf-mutes are the issue of such marriages in proportion of 28 per cent., at the Paris Imperial Institution, 25 per cent. at Lyons, and 30 per cent. at Bordeaux. That marriages between nephews and aunts are contracted in France in proportion, of 14 in 1000, while deaf mutes the results of such marriages are 145 times more numerous than they should be. Marriages between uncles and nieces occur at the rate of 4 per 100, and the deaf mutes resulting is 40 times greater than from ordinary marriages. Marriages between cousin-germans are contracted at the rate of 77 per 100, and deaf mutes are produced in proportion of 24 times more frequently than from other marriages.

Results of Indirect Consanguineous Marriages.—While at Berlin

the proportion of deaf mutes is but 6 in 10,000 among the Christians; it is 27 in 10,000 among the Jews. In nearly the whole of the cases the deaf mutes born of consanguineous marriages have parents perfectly exempt from hereditary affections. When male and female deaf mutes intermarry, if they are not related by consanguinity their children with rare exceptions, are exempt from deafness and dumbness. M. Boudin concludes that "the hypothesis of the pretended harmlessness of consanguineous marriages is contradicted by the most evident and well-verified facts, and can only be excused by the difficulty, or rather the impossibility, of giving a physiological explanation of the production of infirm children by parents who are physically irreproachable."

Since 1831, more than 15,000 men have been exempted in France from military service on account of deaf-muteness, deafness, or dumbness. (*Deafness from Inflammation*, Vol. I., p. 727.)

Case by Dr. C. Dunham.—A boy, aged seventeen, small, but well-proportioned and of good constitution, healthy since his ninth year, has been deaf since he was four years old. At the age of three years had an eruptive disease of the whole scalp which resisted common allopathic treatment. A tar-cap was afterwards "placed upon the head, and, when firmly adherent to the scabs, was violently torn off," "leaving the whole scalp raw. This raw surface was moistened with a saturated solution of Nitrate of Silver. The eruption did not reappear; but from that time the child was deaf."*

His condition at the age of seventeen excited "the earnest solicitude of his friends. His inability to move in society, or to get a situation in business, on account of his deafness, has produced a morbid state of mind. He broods over his infirmity, and secludes himself even from his own family." At this time he came under the care of Dr. C. Dunham, of Newburg, N.Y.

"He is quite unable to hear ordinary conversation, has never heard a sermon in his life. A loud ticking lover watch can be heard at a distance of three and one-half inches from either ear;" or when applied to the forehead or the teeth, he hears occasional buzzing noises in front of the ears. The external meatus is abundantly supplied with soft normal wax. The membrana tympani is white, opaque, and evidently thickened. On inflating the middle ear (which he accomplishes with great difficulty by closing both mouth and nose and making a forcible expiration) the membrana tympani becomes but very slightly convex, and it is impossible to distinguish its distended blood-vessels. There has evidently been a deposit in the substance of the membrane. The orifice of the Eustachian tube is free.

This thickening of the membrane had probably been accomplished

* Amer. Homœopathic Review, Oct. 1858., p. 23.

years ago: there were no physical symptoms that could reveal the process by which it had been brought about. It was necessary then to trace the diseased condition to its origin. It was evident that the deafness had commenced immediately after the removal of the scalp disease by the external application of Nitrate of Silver. The tinea capitis was a *psoric* or *dyscrastic* affection, and "this affection, disturbed in its localization on the scalp, had transferred itself to the tissues of the ear." It was therefore necessary to go back to the original psoric disease, ascertain its specific and peculiar features and prescribe a remedy which might present a true *similimum* for that. The mother thus described it: "Thick, whitish scabs, hard and almost horny covered the whole scalp. There were fissures in the scabs, through which, on pressure, there exuded a thick, yellowish pus, often very offensive. There was great itching, and a disposition to tear off the scabs with the finger-nails—especially troublesome at night."

Dr. Dunham found that the remedy most nearly corresponding with these symptoms was *Mezereum*. Hahnemann, Chronic Diseases, Vol. IV. recommends it for moist affections of the scalp. The proving in the Archiv., Vol. IV. Many symptoms point to the same, especially itching. A new proving by Dr. Wahle, of Rome, gives the group of symptoms more fully: "Head covered over with a thick leather-like crust, under which thick white pus collects here or there, and the hair is glued together; on the head great elevated irregular white scabs under which pus collects in quantity and becomes offensive and breeds vermin. The child keeps scratching its face and head at night, and continually tears off the scabs."

Mezereum was then prescribed for the *deafness* in the present case, "just as if the scalp affection had been still in its original form, and had been the immediate object of the prescription."

"Feb. 3, 1857, Mezereum 30, three globules to be taken on retiring."
"24. Thinks he hears better,—every sound seems louder,—hears the watch at four and a half inches from the right ear, and four and a quarter from the left." Sac.-lactis.

March 1. Has not improved during last week. Mez. 30, three gl.
"27. Hears the watch at six and a half inches from the right ear, seven from the left." Sac.-lactis.

April, 20; Hears the watch at a distance of ten inches with the right ear, fourteen from the left. Hears ordinary conversation easily, with attention. Sac.-lactis.

Sept. 28. Has been steadily improving till three weeks ago, he became more deaf. Mez. 30; Jan. 26, 1858. Hears the watch at fourteen inches from the right ear, and twenty-four from the left. Deafness returns if he takes cold, and disappears with the cold. Mez. 30; March 19. Heard the whole sermon at church distinctly, for the first

time in his life; The opacity of the membrana tympani has disappeared; its elasticity is sensibly increased.

May 24. He has obtained without difficulty a situation in a store. Is no longer conscious of being deaf; his father writes that the hearing is "perfectly restored."

PARALYSIS METALLORUM.—*Plumbum.*—Paralysis of the cutaneous muscles of the fore-arm is common among persons who work in lead. This is called the "wrist-drop," it follows colica pictonum, but occurs also in persons who never had it. Some attribute it to the continued use of the brush among painters, who strongly exert the extensor muscles in the "up-stroke." To avoid it, a London mechanic invented a brush with a paint vessel on the upper end to balance this weight of the brush at the lower end. This prevents fatigue of the wrist, but does not avert the paralysis, which is not produced by a mechanical cause:

1. Because it seizes the left wrist as well as the right.

2. Although painters are liable to it, it is not peculiar to them. All employed in the manufacture of white lead are subjected to it, as well as to lead colic; and it has been caused by internal use of acetate of lead.

3. The mode of treatment hitherto found successful, though efficacious in the palsy from lead has no effect on that from mechanical causes. There have been many cases of palsy of the leg caused by internal use of minute doses of *Saccharum-saturni*; which also causes numbness of various parts of the extremities. An athletic robust man who took dysentery, in the West Indies, was treated with sugar of lead. It cured (in one way,) the dysentery, but entailed on him paralysis, from which he recovered after two months treatment.

TREATMENT.—Dr. Pemberton (*W. Med. Gazette*) says he considers the disease of the fore-arm a local one. The extensor muscles are situated at a disadvantage, having the hand suspended at the extremities of their tendons. He directs a splint in shape like a battle-dore applied along the fore-arm and hand, taking off the weight, and giving to the muscles the opportunity to recover their energies. He has this splint worn night and day, till the disease is cured,—giving no medicine. Other Western physicians reported cases successfully treated in this manner. Some advising cold effusion of water over the arm as the muscles recover action. As improvement advances swinging weights or dumb-bells, at stated times daily facilitates recovery. We give Caus., Nux, &c.

Effects of Electricity, Galvanism, and Electro-magnetism.—They are all considered as "excitants, counter-irritant." Electro-magnetism may be made to act as a tonic, sedative, anti-spasmodic, and also may be made to fill almost any other therapeutic indication. It is supposed to act on the economy by increasing or decreasing the quantity of positive, or negative electricity which the human body may

contain; and that in diminishing the positive electricity it, of course, increases the negative, and *vice-versa*.

The Machine, its Currents and Arrangement.—After the machine is connected with the battery, two posts are found at each end of the stand on which the machine rests. The poles on the left end (where the piston pulls out,) furnish the to-and-fro current, which is induced through the entire helix, and produces a powerful sensational effect. The posts on the right end furnish the direct current, which is simply an intensified galvanic current, passed through the coarse wire of the helix, and this furnishes a very mild sensational electro-magnetic current, of strong chemical power. It is this latter current only that will electro-plate, show chemical decomposition and act as an anæsthetic. By a connection of the negative pole of the battery with the positive pole of the to-and fro current, four more currents, of mixed powers and effects, are produced, further details of which are unnecessary.

CASE.* *Dr. Lassing.*—A sea-faring man, aged fifty-four, nervous bilious temperament; was suddenly attacked with *paralysis hemiplegica*, shortly after laboring under a high state of nervous excitement and lying exposed in a draught on board of a ship at sea. There was entire loss of voluntary motion on the right side, coming suddenly and immediately. The eye and mouth were drawn on that side, memory and judgment were much impaired, and speech was indistinct; saliva flowed from the mouth. The muscles on the affected side were considerably wasted and flaccid. This gentleman has been bled, blistered, purged by violent drastic cathartics without benefit. His digestive functions and portal system are much deranged. He has since taken an emetic, then tonics, after these, saline cathartics; then strong stimulating liniments of Conium, Turpentine, Arnica, Camphor and Opium. Electro-magnetism was then employed, as follows, twice every day:

“ Negative conductor immersed with patient's right foot in a basin of warm salt water; positive conductor along the entire vertebral column, beginning at the first cervical, and passing to the coccyx, not returning, but breaking the circuit, and commencing again at the cervix, thus applying it for about fifteen minutes each time. I then let the patient hold the negative conductor in his hand, and by applying the positive conductor at the origin of the muscles of the arm, produced contractions to which his attention was directed; and exhorted him to make the same proceeding as was had with the limb. The positive pole was also applied along the side of the neck and chest. With little variation, this treatment was persevered in for two months, the patient gradually improving. Also ordered exercise, gradually accustoming

* *Electro Therapeutics.* By H. Lassing, M. D., Med. & Surg. Reporter. Vol VIII. p. 382.

him to do away with crutches, canes, elastic straps, and electricity, as assistants to locomotion; and the patient was finally discharged cured, after three months' treatment. No impediment to motion is now perceptible. The muscles of the face and mouth are now again equally balanced, and the entire effects of the paralytic attack have disappeared. General health good."

Paralysis (partial) from Spinal Affection.—Dr. Trinks, of Dresden, Saxony,* gives the case of a man, aged forty-six. He had before suffered from rheumatic and gastric affections, enlargement of the liver. In 1858, he had vomiting and diarrhoea, followed by catarrhal fever, which progressed to a typhoid state, affecting the brain. In about a month he had recovered from all the symptoms except those of spinal disease. In October, 1858, "the brain was perfectly free; the mental faculties unaltered; no vertigo; no heaviness; no dullness; no headache; the organs of special sense not affected; no sign of pain in the whole extent of the spine, even on pressing hard on each vertebra; no pain perceived in the medulla itself; no heat, coldness, or formication. But sensation was obliterated in the forearms as far as the elbow, in the lower limbs from the toes to the glutei muscles; the loss of sensation had steadily progressed from its beginning in the tips of the fingers and toes, till there was perfect anaesthesia of the nerves of sensation. Motive power was also gradually lost; he could grasp larger objects, but could not retain them in his fingers. He could sit up in bed or a chair, but could not stand, the knees giving way under him; he could not walk a step; the muscles of both the arms and legs had become flaccid, had lost their hardness and contraction, and were wasting; temperature of the limbs was not changed; appetite and digestion good; alvine evacuations defective and only produced by cold water injections; urine natural, but evacuated too frequently, the sphincter having lost its power; sleep undisturbed by any other cause. He had now been treated by tonics, stimulating drinks, *Apis*, *Nux-vom.*, *Cantharides*, but without benefit.

The cause of the diseased condition was supposed to have been the previous typhoid febrile disease, which, it was thought, had induced *atrophy* of the spinal marrow. In this view of the nature of the case, Dr. Trinks prescribed *Phosphorus*.

The patient took three drops of the second decimal dilution in pure water every morning and evening during two months. Improvement was gradually manifested. Sensation returned in the upper and lower limbs, the muscles gradually regained their natural tension, strength, and mobility. When recovery had so far advanced that the patient only felt weakness in the knees after walking a long time, the dose was

* Müller's Homœopathic Quarterly.

reduced and taken only every evening. After two and a half months the patient could attend to business, take long walks without fatigue. No injurious effects followed the use of the Phosphorus.

Thuja.—*Progressive paralysis* is characterized by the most painful aching of the muscles, lightning-like lancinating pains in the affected muscular parts, trembling and want of control of the will over those muscles; deadness of the tips of the fingers, the toes, &c.

Thuja produces similar symptoms and cures them.

Giddiness coming after a meal, after exertion, even to falling—syncope, without any other morbid symptoms, resisting all seemingly suitable remedies, is cured by *Thuja*. (*Dr. Wolf*.)

Paralysis of the Lower Extremities Connected with Disease of the Kidneys.—In cases of *paraplegia* from injury or disease of the spine, the bladder participates in the debility, and empties itself imperfectly. A little urine remains undischarged, the mucous membrane of the bladder falls into a state of chronic irritation, and from it is viscid mucus or muco-purulent matter thrown off in the urine, which acts as a ferment in the urine leading to its decomposition. Here the urinary disease is merely secondary in the following form of *paraplegia*; though it is the first remarkable deviation from health. The patient exhibits tottering, weakness of the knees; tendency to stumble in going up or down-stairs; there may be some distortion of the bones of the spine; displacement from caries of the bodies of the vertebra, or ulceration of the intervertebral cartilages; some tenderness of the spine; symptoms of inflammation of the cord; pressure of the tumor or aneurism of the cord.

In 1833, Mr. Stanley published some cases of paralysis from nephritis in which no disease was found in the spinal column. These were in the kidneys. Rayer mentions similar cases. (*Diseases of the Kidneys*, Vol. III., p. 168.) Sanson, the French surgeon, died of this form of disease in 1841; also Count D'Orsay, at Paris, 1852.

Paraplegia is a frequent result of seminal emissions, and Lallemand, in his work on that subject has given many cases. The patients are feeble, vascillate in their limbs, and become at last completely paralyzed in the lower extremities; many of his cases followed urinary emissions also. I have seen a melancholy case in a young man who became dyspeptic, and then paralyzed, hypochondriacal, and he crept about the floor on his hands and knees. Chronic gonorrhœa, cystitis, enlargement of the prostate, retention of urine and nephritis are the antecedents of *paraplegia*. When the urinary organs improve, the limbs recover power.

Pathology.—Inflammation of the kidneys, (*Stanly, and M. Laurie*), with numerous small abscesses. The mucous membrane of the ureters, and the pelvis of the kidney soft and thick, colored by injection, distended

by purulent matter. The bladder, with injected mucous membrane, ulcerated, perforated, or hypertrophied, or thickened; prostate enlarged, or presenting that sort of transverse valve formed the central portion which so often obstructs the catheter; or full of pus, pervaded by abscess; stricture of the urethra.

The urinary organs are largely supplied with branches of the great sympathetic nerve. The vertebral portion of this nerve consists of a number of ganglia united together by branches which pass from each ganglion to the one above and the one below it. There are twelve of these dorsal ganglia, four lumbar, and four or five sacral; and every one of them communicates with the corresponding spinal nerve. (Wells, *Braithwa. July*, 1858, p. 39.)

By this connection is explained the influence of the spinal marrow upon the secretion of urine. Concussions or compressions of the cord, injuries of the vertebrae, and inflammations of the cord or its membranes cause the secretion of alkaline urine or development of ammonia in the bladder, while the bladder itself is more or less paralyzed. The explanation of this was given by Mr. Stanley. If you disturb the normal condition of the sympathetic nerves supplying the kidneys and bladder, it may alter the condition of the spinal nerves, with which the disordered sympathetic nerves communicate, or the condition of the muscles which derive their motor power from the spinal nerves, whose relations with the sympathetic may be disturbed.

Disease of the kidneys also exerts an influence on the whole system by preventing the purification of the blood, and the nervous system suffers in common with the rest of the body.

Gastric Derangements usually Connected with Disease of the Kidneys.—Imperfect digestion; fissured, furrowed, clammy tongue; relaxed, turgid fauces; capricious appetite; thirst; tendency to eat too fast; uneasiness, flatulence, and disturbance after eating; constipation; all of which symptoms are explained by this connection between the renal and solar plexuses of nerves through the great sympathetic.

Diagnosis.—Distinguish this form of paralysis from that depending on simple atrophy or softening of the lower portion of the cord by these symptoms: some impediment to the discharge of urine is an early symptom. This is connected with obstinate gastric derangement. Weakness or extreme debility of the limbs, rather than paralysis. The power of sensation is scarcely impaired, but the muscular power is almost lost. There is no marked atrophy of the limbs, the temperature is but little lowered. The sphincter ani may be weak, but not paralysed. The bladder has some degree of contractility remaining. There may be no pain in the back; none in pressing the spinous processes, or in applying a hot sponge to them. The degree of weakness of the limbs varies according to the state of the urinary organs; great

amendment may follow catheterism and removal of obstruction to the free passage of urine. In the early stages of the disease, no cramps or convulsions, spasms, formication or violent neuralgic pains.

Causes.—Smoking in excess, which impairs digestion; cold bathing when injudiciously employed; sexual irregularities; excessive indulgence; late marriages. The expensive luxuries of the present day cause men to postpone marriage to a late period of life, and lead many to prefer celibacy with its attendant evils. They then spend their money in irregular excess, rather than encounter the burdens of a household, with all the encumbrances required by the present unnatural state of society.

Treatment.—In the early stages, ensure free passage of the urine by the introduction of the bougie; correct the general health; regulate the diet, exercise, clothing, choice of a residence; free exposure in the open air aids in restoring lost vigor. Advise marriage in every case where the circumstances render it practicable.

In the more advanced stages, all the above considerations remain important. We must also correct the derangements of the digestive organs, the constipation by all the means mentioned under that article. Many are greatly injured by the practice of taking pills. Aloes and saline purgatives constantly increase the irritability of the urinary organs. Mr. Wells recommends an electric belt to be worn around the body.

There should be a thorough change of the habits of life; a long sea voyage.

In more advanced cases, the feebleness of the limbs is extreme. The patient can walk a mile or two, perhaps, but the gait is tottering; the urine is loaded with mucus or muco-pus and the phosphates; it soon becomes ammoniacal after it is passed, which is done at short intervals. *Cannabis-indica*.

Nux-vomica is an important remedy. Though Strychnine in even small (allopathic) doses did only harm in the hand of Mr. Wells. (*Braithw.* p. 42.)

Galvanism or electro-magnetism is useful only by passing a very feeble current through the weak muscles every day. The patient may wear a weak portable battery, with a pole fixed to each limb, so as to keep up a constant, but mild current by day and night.

Pyro-phosphate of Iron has been beneficial in some cases.

Cantharides, has a specific action upon the kidneys and urinary passages. Dr. Seymour says it has removed serum effused into the spinal cavity. Mr. Wells says it restores contractile power to the bladder, and relieves the frequent desire to urinate. Buchu, *Uva-ursi*, and *Pareira-brava* are recommended.

MERCURIAL PALSY.—“*Tremblement Mercuriale*” of French au-

thors.—Silverers of looking-glasses breathe the vapor of the metal and also receive it by the touch. Many can only work on alternate days, and many have to be absent from it for months. *Symptoms produced by the vapor:* “Difficult enunciation, pain and constriction at the base of the chest, emaciation, debility, tremors; and, lastly, salivation. The gums are often wasted, and the teeth left loose in the sockets. As the fingers and hands are generally the parts first disordered, it appears that the primary impression is on the nervous system at large, and is made through the medium of the skin, rather than that of the lungs. Intemperate men suffer most.”*

The approach of mercurial palsy is sometimes sudden, though it is generally gradual. There are slight convulsive agitations followed by tremors of the affected muscles, particularly of the arms, when it occurs among the workers in mercury. As it extends to the lower extremities and other parts of the body, the patient becomes incapable of muscular exertion, or ceases to be able to steady his hands to any work requiring neatness and precision. He becomes restless, suffers from abdominal disorders, falling out of the teeth, constipation, a dry or brownish state of the skin, slight convulsions, great depression of nervous power, and entire derangement of general health, which continues for years, and, generally, for life. The affection is commonly caused by long-continued exposure to the fumes of mercury; but it may be excited in a few hours by the breathing of air in which the deadly vapor is largely diffused, and in this highly attenuated form it is directly applied to the extensive surface of the bronchial tubes and air-cells.†

Case.‡—A workman, aged twenty, felt the trembling begin three days after he began silvering; the mouth became sore in six days. In six months he is thus described: The speech is greatly impeded; the limbs totter; he walks slowly and with great difficulty, and with an infirm and awkward step; the tremors prevent him from carrying food to his mouth; slight subsultus tendinum of the upper extremities; the tongue quivers; gums tender; pulse strong, rather quick; appetite diminished; sleep disturbed, body wasted; he feels oppressed with a load across the lower part of the chest, or as if a substance lay at the bottom of the lungs which had been drawn in by inspiration; breathing quick, accompanied with strictured feeling and cough. He was nearly thrown from a bath by the violence of the trembling, driving a quantity of water over the sides of the bath, and would have been thrown out but for being held in it by two men. The fact of the rising

* Observations on the Diseases of Artizans, p 112.

† See Merat. Dict. Sci. Medicale, l. vi., p. 32. Colson, de Trem. Metallique, &c

‡ Mitchell, Med. Phys. Jour. 1831.

of mercurial vapors at the common temperature of the atmosphere is proved by the simple experiment of Christison.* A small piece of gold is suspended in the mouth of a vial which contains a small quantity of metallic mercury. In a few minutes the vapor rises and forms an amalgam on the surface of the gold; and this vapor is capable of producing the worst symptoms of mercurial poisoning if diffused in an apartment insufficiently ventilated. Schloper tried the effects of the vapor of corrosive sublimate in solution on rabbits, and found the vapor of six grains fatal in five minutes. When twenty-four grains were sublimed by the blow-pipe, the vapor immediately "produced painful constriction of the throat, with headache, sickness, and vomiting in several medical students."

Case by Dr. Hilton. (*Lancet*, 1860, p. 488.) A man had lost the power of motion in the lower extremities, and sensation was much diminished below the pelvis; he complained of extra pain in the abdomen and pubes, and thinks there is the seat of the disease. The surgeon relied upon rest. When the palsy results from injury of the spinal marrow the person may be completely palsied both as to sensation and motion; but little higher up than the original seat of injury there is exquisite sensitiveness, the patient suffering extreme pain; a little higher still the skin is extremely sensible. In this case the nerves that supply the tender part of the skin are attached to the upper portion of the injured spinal marrow, which, at this moment, is in an inflamed condition. In one case of this kind Tartar-emetic pustulation was directed to be used over the spine. The patient applied it where the pain was the worst. There it did no good, though it made extensive pustulation. The case was one of diseased vertebræ; he afterward tried hydropathy and homœopathy, and thought he was cured by them, though the surgeon "attributed the recovery to rest."

* On Poisons, p. 391.

CLASS V.—DISEASES OF THE REPRODUCTIVE FUNCTION.

ORDER I.—CENOTICA.—AFFECTING THE FLUIDS.

1. AMENORRHœA.

GENERAL DESCRIPTION.—Many of the symptoms of this complaint bear a close resemblance to those of chlorosis, and it is on this account, probably, that some authors have confounded the two maladies. As retention or suppression of the menses is a very common and prominent symptom of chlorosis, it is not surprising that it has been deemed a *cause* of chlorotic symptoms, rather than as a mere *symptom*. But the fallacy of this doctrine will be evident, when we reflect that chlorosis occurs in males, in young children, and in females whose catamenial functions are regular through the whole course of the disease.

Two kinds of menstrual irregularity are generally included under the above head: first, *retention* of the catamenial flux beyond the natural period, from constitutional causes or mechanical obstruction; and second, partial or total *suppression* of already established courses; from phthisis, chronic hepatitis, general debility, chlorosis, fevers, and exposure to cold and dampness.

It is not improbable that the same causes which contribute to the development of chlorosis also operate to prevent the usual menstrual flux at the period of puberty, and thus to establish one variety of *amenorrhœa*. Natural delicacy of constitution, a highly impressible nervous system, and a lymphatic temperament, are general conditions which precede and accompany both maladies, although amenorrhœa sometimes occurs in the most robust females. The revolution which nature causes in the female organism at the period of puberty, ought always to become manifest in the menstrual flux; but the causes which often operate to retard it, and thus to thwart the kind efforts of nature, are numerous and diversified.

Singular phenomena are sometimes observed at the period of puberty in relation to this periodical evacuation—for, in the place of the usual uterine evacuation—there often occur haemorrhages from different parts; fluxes now and then take place from the top of the head, the ends of the fingers, the soles of the feet, the stomach, the intestines, nose, the lungs, and other parts of the body, and apparently assuming the

place of the monthly discharges. These abnormal fluxes are termed vicarious. Occasionally the supplementary secretion occurs in the form of ulcers, enlargement and irritation of certain veins and eruptions. The menstrual discharge varies much in its quantity and character. In hot climates puberty arrives earlier, and the discharge is more abundant than in temperate latitudes.

When the discharge comes on at the proper period, but is deficient in quantity, or is composed of serum, mucus, or pus, other parts of the economy suffer, as by pains in the back, pelvis, limbs, and head, until the period has passed, after which the sufferings abate until the succeeding epoch and are then renewed. This deficient secretion may continue for months and even years, without giving rise to any structural lesion, or any other symptoms than those enumerated, when some new circumstance, like marriage, a sea-voyage, or change of climate, may restore the function to its natural condition.

Puberty, with its usual accompaniment, the menstrual flux, does not occur in cold regions until the age of fifteen or sixteen years, while in tropical countries it arrives at the age of eight, nine, and ten years. Frank records cases where the courses appeared in children of one, three, and four years. He also treated at Pavia a woman who had given birth to three children without ever having had a menstrual or lochial discharge.* Many cases of this kind are mentioned by other writers, who also allude to the masculine organization and characteristics of these women, such as firmness of muscle, harshness of voice and smallness of the breasts.

From these facts we infer with Frank and others, that the menstrual function is not absolutely essential to the occurrence of conception, and that a woman may go through her whole term of pregnancy and finally give birth to a healthy child, without any development whatever of the catamenial function.

Frank, in his "Practice of Medicine," expresses the same opinion : "Nous conclous de ces observations que l'apparition des menstrues est, à la vérité, un des principaux signes qui annoncent le développement de l'organe utérin et l'abord du sang dans ses vaisseaux, mais que la conception et la nutrition du fœtus peuvent également s'opérer quoique cette fonction périodique ne soit pas encore établie ; que la fécondité dépend d'une autre cause, d'un principe analogue à celui dont elle dérive chez les femelles des animaux ; que la nature a soumis en général toutes les femmes bien organisées au tribut menstruel, mais qu'elle ne l'exige pas toujours avec la même rigueur sous peine de stérilité."

In regard to the natural duration of the catamenial discharge,

* *Traité de Med. Practique*, Vol. II., p. 253.

nothing definite can be advanced, since so much depends upon the constitution, the climate, and the habits of life; but the average duration is about three or four days.

DIAGNOSIS.—As the period approaches when the *girl* is to become a *woman*, new ideas, new thoughts, and new desires take possession of her mind. Instead of amusing herself with her doll, she prefers to enjoy, although with much coyness and timidity, the society of an attractive young friend of the other sex; instead of the romping freedom of the child, we now observe the retiring manners and the burning blushes of the maiden. Her physical, perfect and pleasing to the eye, and she looks forward into the dim vista of life, with deeper interest, higher aspirations, and a more proper appreciation of the responsible duties she may be called to fulfil.

If in conjunction with these physical and moral changes the cata-menial discharge makes its appearance naturally and regularly, the girl retains her health and vigor; but if the period passes by without the usual development of the monthly tribute we are presented with the following symptoms of

1. RETENTION OF THE MENSES:

Pale, wax-like, or sullen sickly appearance; furred tongue, and foul breath in the morning; variable and sometimes morbid appetite; nausea, general debility, lassitude, and sense of fatigue; pains in the small of the back, pelvis, abdomen, head, side, and limbs; disinclination to mental or physical exertion, coldness of the feet; constipation; leucorrhœa; depression of spirits; sad and weeping mood; distress in the stomach after eating; distention of the abdomen; faintness; palpitation of the heart after exercise; rapid pulse; headache; vertigo; roaring in the ears; nightly wakefulness; hysterical symptoms; peevishness and irritability; haemorrhages from the nose, stomach, lungs, and rectum; supplementary discharges from certain parts of the body.

2. SUPPRESSION OF THE MENSES

May arise from a natural cause, like pregnancy, or from general debility resulting from excessive loss of blood, chronic and acute diseases, inordinate mucous, purulent and seminal discharges, polypi, venereal excesses, constant and severe muscular exertion, and mechanical obstructions; or it may occur suddenly during the flux from violent emotions of the mind, exposure to cold and dampness, cold baths, or any other cause which abruptly shocks the system.

The symptoms which follow suppression are usually more acute and dangerous than those of retention of the menses. It is not uncommon

for the former to induce serious haemorrhages from the lungs and stomach; also inflammations and congestions of the brain, lungs, uterus and liver; while in the latter, the symptoms arise so gradually, that the organism in some measure adapts itself to the morbid condition, and thus escapes the inflammatory and febrile attacks which are so common in suppression.

Suppression occurs in the most sound and robust constitutions, as well as in those that are weakly; *retention* but rarely happens in healthy and vigorous subjects, but follows usually as a consequence of original delicacy of constitution. The symptoms of the former are more violent than of the latter, but upon the whole less dangerous to life, and more readily controlled by medicines.

In cases where the monthly secretion takes place, but is retained in the uterus from some mechanical obstruction, the blood often preserves its fluidity and freshness for a long period. This is owing to the exclusion of the oxygen of the air, the presence of which is essential to the process of decomposition.

CAUSES. — Natural or acquired delicacy of constitution, combined with a lymphatic temperament, and a highly sensitive nervous system is by far the most common cause of retarded menstruation. A certain amount of stamina, of physical and nervous energy is essential to the healthy performance of the functions, and so long as the organism is without the proper supply of this force, all of the functions must be imperfectly executed.

Structural lesions which give rise to profuse purulent mucous or sanguineous discharges, operate both as causes of retention and of suppression. In this class may be included tuberculous ulcerations of the lungs, chronic bronchitis, abscesses of the liver, and lumbar abscess.

Other causes are: malformations of the uterine organs, or the vagina, like imperforate os-tincæ, imperforate hymen, mal-organization of the ovaries or fallopian tubes, unnatural growths in the uterus or vagina, which oppose an obstruction to the passage of the menstrual secretion. Dr. Mackintosh divides the mechanical obstructions to the discharge of the menstrual fluid into two classes, viz: "Those occasioned by cohesion of the sides of the vagina and labia, and an imperforate hymen, and those caused by an imperfect or imperforated state of the *os-uteri* itself. All these cases are comparatively rare, but few men can have been in extensive practice for twenty years without meeting with several, and, therefore, they require some notice in this place. In the first set of cases, in addition to the constitutional symptoms and local pain already mentioned, there is great fullness, distension, and a sense of weight in the passages, accompanied sometimes with severe pain, and a feeling of bursting; straining at stool

and micturition, together with enlargement of the abdomen which excites suspicion of pregnancy. The nature of the case can only be determined by examination and can be relieved only by *the knife*.

"In the second set of cases, there is greater difficulty in detecting the state of the parts, from the natural impediment to an examination which exists at the orifice of the vagina." Dr. M., however, mentions that in the only two cases of imperforate os-uteri which had fallen under his observation, there was no hymen, and the passages easily admitted the introduction of two fingers. He punctured the os-uteri in one of these cases, and afterwards dilated the passage with bougies, until the discharge found free exit, when all the unpleasant symptoms subsided, and the patient was restored to perfect regularity and excellent health. The other patient, whose delicacy forbade the operation, gradually sank under her symptoms and died. We have met with one case of retention from adhesion of the walls of the vagina. The patient was a healthy young married lady whose menstruations had been regular until she became pregnant, after which they ceased, and she advanced as usual until the fifth month, when she met with a miscarriage; and during the delivery of the foetus so much violence was done to the parts, that inflammation and sloughing of the vagina followed, adhesions took place between the vaginal walls, and the passage became entirely closed to the escape of the menstrual fluid. The patient experienced for many months most severe pains in the pelvis, abdomen, back, and especially at the monthly periods; many severe constitutional symptoms set in, and she became reduced to a low state of health. A free incision through the cicatrix gave vent to a large quantity of fluid blood, exhibiting but slight signs of decomposition, and the patient speedily regained her health.

The most harmless cause of suppression is that which arises from pregnancy. But, although this is a *natural* cause, its constitutional effects are manifested in the form of frequent nausea, morning sickness, ptyalism, &c. These symptoms, although quite troublesome and annoying to the patient, serve the important purpose of guarding the brain, lungs, and other vital parts, from dangerous inflammation and congestions.

One of the most notable causes of suppression during the flow of the courses is abrupt exposure to cold. This obstruction is apt to arise in going suddenly from a warm room after exercise, and when the pores are open, into the cold air. It is also caused by plunging the limbs or body into cold water during the period. Insufficient clothing and thin shoes may also be mentioned as common causes.

Violent emotions of the mind, vehement anger, terror, sudden joy, intense grief, revolting sights, and electric shocks, may likewise be

reckoned as frequent causes of obstruction or suppression of menses during the period.

It has been asserted that severe physical exertion often induces suppression, and the fact that habitual dancers are subject to but slight catamenial discharges, has been adduced as a proof of the assertion. The same result may happen to females with reference to the monthly secretion, and yet no unpleasant consequences arise from the diminution or suppression of the discharge, since a sufficient amount of vital stimuli has already been expended in severe muscular exercise.

PROGNOSIS.—Retention, proceeding from a natural lack of constitutional vigor, is always difficult to cure; but where no serious organic difficulty exists, we may generally hope for ultimate success. In cases, however, which are complicated with chronic pulmonary disease, drop-sical affections, or organic disease of the heart or liver, the prognosis must always be unfavorable. Retention from imperforate os uteri or hymen, and from vaginal adhesions and polypi, are all readily cured by surgical means. When suppression arises as a symptom of some chronic disease, especially if it has persisted for several months, we shall, for the most part, find the case incurable; when, on the contrary, it has arisen from an acute disorder, the cure may be easily accomplished.

Obstructions which are consequences of anger, grief, fright, jealousy, or exposure to wet and cold, may also be speedily restored by suitable specifics.

In forming an opinion respecting the probable termination of amenorrhœa, it should always be borne in mind, that it is almost invariably either a symptom of some other disease, or that it owes its origin to a general lack of constitutional vigor. Much, therefore, depends upon the general condition of the system, and upon the curable or incurable nature of the malady which causes the menstrual derangement, as to whether our prognosis be favorable or otherwise.

TREATMENT.—In the management of amenorrhœa, our first attention should always be directed to the removal of the cause upon which it depends. Most cases of retarded menstruation will derive material benefit from well-regulated exercise, nutritious diet, change of scene and of climate, sea air, sea voyages, and bathing. Retention from mechanical obstructions can only be cured by surgical means. But in suppression or obstruction, unattended with any serious local complication, and originating from exposure to cold, mental emotions, suddenly checked perspiration, cold drinks, fevers, &c., we may afford the most prompt relief by the employment of suitable remedies.

We call attention to the following medicines: *Pulsatilla*, *Sabina*, *China*, *Calcarea-carb.*, *Ferrum*, *Graphites*, *Macrotin*, *Borax-ven.*, *Conium*, *Serpentaria-virginica*, *Sulphur*, *Sepia*.

Aconite.—Suppression of the menses from sudden cold. There are: Paroxysms of congestion of the head or chest, palpitation of the heart; pressive, pulsative, or shooting headache; redness of the face; fullness and hardness of the pulse; frequent heat, with thirst; irascibility and fretfulness. It is often successful in chronic cases also.

Case.—Amenorrhœa of six months' standing in a plethoric young girl, aged twenty-one, accompanied with dyspnoea, and oppression in the præcordial region, without any other notable sufferings, was cured by Aconite alone: a few globules of the 24th having been dissolved in water and given in spoonful-doses four times a day. (*Malaise*.)

Pulsatilla is adapted to females of a mild, timid, and amiable disposition, who are easily excited to tears or to laughter. It may be used in cases where menstruation is delayed a few days beyond the natural period, in abrupt suppression of the menses from cold bathing, wet feet, sudden suppression of perspiration from cold air, violent passions and emotions, and in fevers, in alternation with other suitable remedies. It is also valuable in partial obstructions, accompanied with dyspeptic and hysterical symptoms. The general indications are, lassitude, weariness of the limbs, unpleasant arterial pulsations in different parts of the body, congestion, anxiety, and oppression of the chest after exercise, and in the night when in the recumbent posture: variable appetite; coldness of the feet; sleeplessness, pains in the back weeping mood; vertigo or giddiness; colicky pains in the abdomen.

Sabina is only useful in that irregular variety of amenorrhœa in which the menses appear too soon, and too profusely for a few hours and are then suppressed, either temporarily or permanently. The kind of amenorrhœa in which this medicine is applicable, is for the most part induced by a hyposthenic condition of the uterus.

China and *Ferrum* are especially serviceable in retarded menstruation dependent on constitutional debility whether natural or acquired. The general indications for their use, are pale, sallow, or cachectic countenance; emaciation; muscles soft and flabby; rapid circulation; rapid and difficult respiration after exercise; palpitation of the heart, excited by mental emotions, exercise, or eating heartily; lassitude, debility, and general indisposition to think or act; transient pains in the chest, back, side, pelvis and limbs; swelling and pain in the hepatic region; bitter taste; feeble appetite; impaired digestion; nightly restlessness; leucorrhœa.

Calcareo-carb., *Sulphur*, *Graphitis*, *Conium*, and *Sepia*, are indicated in the catamenial irregularities of scrofulous, rickety, and syphilitic subjects. The history of each case will enable us to decide respecting the precise nature of the disease upon which the amenorrhœa is dependent, and thus render it easy to select an antipsoric which shall gradually remove the original cause of disorder, and cure the pa-

tient. As a general rule, *Calcarea-carb.* agrees best with young persons, whose menses appear too soon, while *Sulphur*, *Graphites*, *Couium*, and *Sepia* may be exhibited at any age, but for the most part in cases of retarded and suppressed menstruation.

Serpentaria-Virginica.—We have often used this medicine in suppressed and obstructed menses, from cold, violent emotions, and the debility consequent on fevers, with marked success. A recent cure of amenorrhœa verging on chlorosis by this remedy, confirms our previous opinion that it is a remedy of much value in disorders of this character.

As a majority of the cases of amenorrhœa have their origin in some inherent constitutional vice, and are, in reality, but mere symptoms of some other affection, it is of importance that our attention be directed to all the remote and slight symptoms which may exercise an influence upon the economy, as well as to the more immediate and visible signs of the malady.

Administration.—When the menstrual derangement has approached gradually, and is evidently a symptom of some general disease, like scrofula, chlorosis, phthisis pulmonalis, dropsy, or chronic hepatitis, the remedies must be selected with reference to these maladies, and the same attenuations and repetitions employed as advised under these different affections.—As a general rule, in these cases, we employ the first, second, and third attenuations; and repeat the dose but rarely; but in abrupt obstructions, occurring in females of a robust constitution, from undue exposures, or over-excitement, we make use of the first or second attenuations, and repeat every two, three, or four hours, until we are satisfied with the effect produced.

Now and then, partial or entire retention of the menses, gives rise to constitutional disturbance of so urgent a character, that the gradual process of dilatation with bougies cannot be relied upon. In such cases, it is now the practice of Dr. Simpson and other eminent accoucheurs, to resort at once to incision through the contracted os, and then to keep the orifice open with bougies during the healing process.

This operation often proves quite successful; but it is always attended with more or less danger of metro-peritonitis.

In one case of this kind, operated on by Professor Simpson, severe metro-peritonitis, and an abscess upon the broad ligaments followed, leaving the parts morbidly sensitive for many months.

2. DYSMENORRHœA.

Painful Menstruation.—From δυσ, with difficulty and μῆνος, the menses. Difficult or painful menstruation, accompanied with severe pains in the back, loins, and region of the ovaries or uterus.

It may appear in different forms, and originate from various causes.

1. It may be connected with derangement of the digestive organs.
2. It occurs in gouty or rheumatic constitutions.
3. It is of a hysterical or neuralgic character.
4. It occurs in connexion with inflammatory action of the uterus, usually the os and cervix uteri.
5. It arises from ovarian irritation.

DIAGNOSIS.—Painful menstruation is of most common occurrence in females of sanguineous and robust constitutions, and of ardent and animated temperaments. The monthly flux makes its appearance at the usual period, but generally in small quantity, often becoming entirely suppressed for several hours, and then reappearing to a greater or less extent, perhaps again to be suppressed. Females subject to dysmenorrhœa, are almost invariably troubled with constipation and frequent headaches, from the rush of blood to the brain in the interval between the catamenial periods. The usual symptoms attending dysmenorrhœa, are: severe bearing-down pain in the uterine region, similar to the pains of parturition, and coming on in paroxysms; constant aching in the small part of the back, the loins, the pelvis, and the limbs; accelerated action of the heart and arteries; flushed cheeks; headache, cutting and pressing pains in the abdomen; flatulence; spasmodic sensation in the region of the stomach; nausea; eructations; oppression in the chest; anxiety and irritability; scanty discharge of blood which is not coagulable, and containing lymph, and shreds of a membranous structure, or clots of dark blood.

When the local inflammation does exist, it is renewed and augmented at the return of every menstrual period. Of late years too much attention has been given to the *local* treatment of female diseases. Local ulceration has been caused or aggravated by caustic treatment much more frequently than the real disease has been reached through such measures.

VARIETIES OF DYSMENORRHœA.—**1. Neuralgic Form.**—This occurs most frequently in unmarried females, or in married women who are childless. In these cases both the sterility and painful menstruation are probably dependent on ovarian disease. It is more commonly found in females who have passed the 30th year, and the general health is likely to become much involved if the disease continues for any considerable time. A state of mental and nervous excitement and mental irritability is induced, which is sometimes regarded as insanity by the physician and friends; and the patient may be consigned to a lunatic asylum; but this only aggravates the nervous as well as the uterine disease.

2. Congestive Form.—Most common in young unmarried women, and sometimes cured by marriage, though it is often met with in those who have had children, especially such as are constitutionally strong, healthy, and of plethoric sanguine temperament.

CAUSES.—The same general causes that produce suppression of the menses further derange the general health in rheumatic, nervous, or psoric constitutions. The severest portion of the pain depends on *ovarialgia*; it is deep-seated and neuralgic in character, amounting in severe cases to inflammation as well as neuralgia of the ovaria. This form of the disease seems to become more common in proportion as civilization progresses. It is entirely unknown in savage life; and in that state of society which formerly existed in the frontiers of the Western States it was scarcely heard of. Now, it is said, by Dr. Tyler Smith, that “almost all women in the better classes suffer much pain and disturbance from menstruation,” and the limits between pathology and physiology can hardly be defined. (*Lectures in Hunterian School of Med.*) In all cases the origin of the pain is in the ovaries, though it often extends to the uterus, and may be severe in the ovaries even when the uterus is wanting. The greatest distress is usually felt in what is called the “bearing-down pain,” extending from the pubes to the knees; and it chiefly consists of a real tenesmus of the os and cervix uteri, analogous to the tenesmus of the intestines in dysentery or that of the bladder in strangury. When there is real structural disease of the os and cervix the tenesmus is more severe and needs special treatment; but the dysmenorrhœa is not in general caused by chronic inflammation of this surface; the connection between the two conditions is only one of coincidence, not of causation. The most frequent causes of dysmenorrhœa are: an inflamed condition of the secretory vessels of the uterus, an unnaturally small *os-tinca*, and inveterate constipation; it occurs in females of a full, plethoric habit, of fancies easily excited to activity, who are fond of the pleasures of the table, of love and show, who prefer to pass their time in heated parlors, or crowded ball-rooms, rather than in active exercise out of doors. When we reflect upon the habits and modes of life which the customs of refined society impose upon the young females, we shall no longer wonder that this important function of the uterus should so often become disordered. The foolish mother, anxious that her child should grow up according to the laws of a false elegance, with a shape of body moulded to suit the *code of fashion*, rather than in those once approved proportions which the Creator gave her, envelops her in corsets and stays, pressing the abdominal viscera downward upon the bladder and uterus, and the thoracic organs upwards towards the throat, and thus moulds a waist sufficiently small and, *wasp-like* to meet the requirements of a sham gentility. In carrying out this wicked whalebone and buckram system, the important functions of circulation, respiration, digestion, and menstruation are of no sort of consequence to the deluded victim or her friends, when compared with the imperative demands of *fashion*. God made the human

body of precisely the right proportions for the healthful exercise of all the organs; civilized woman baffles this ordination by mechanical devices, and makes of the form an artificial thing, recognized and known as a specimen of gentility; the functions of which are subject to natural derangements, by consumption, chlorosis, dysmenorrhœa, amenorrhœa, constipation and organic affections of the heart. After the innocent young girl has been thus cheated, not by "dissembling nature," but by a fashionable mother, "out of her fair proportions," it is deemed necessary, in order to complete her education, to prim her up within the crowded walls of a boarding-school; to cram her mind with some ten or twelve studies at a time, including, of course, music, and the current light literature; and to neglect active exercise, wit, fun, mirth, and other health-promoters, as *vulgar*. In this manner the countenance acquires that pale and distingué cast so much coveted, and the body that frail and enfeebled state so common in cities.

Another cause which occasionally gives rise to painful menstruation, is an unnaturally small *os-tinctæ*. Dr. Mackintosh supposes this to be a very common cause of dysmenorrhœa, and details numerous cases of the kind which have come under his own observation. When the painful symptoms do not yield readily to the proper remedies, an examination may reveal a deficiency in the capacity of the *os-tinctæ*, which may in some instances be enlarged by the successive introduction of a graduated series of bougies.

The other causes which should be particularly noticed are: collections of indurated faecal matter in the colon and rectum, uterine polypi, exposure to cold, and rheumatic affections of the uterus.

TREATMENT.—Abundant active exercise in the open air, regular hours, a plain regimen, abstinence from wine, coffee, and green tea, and a temperature not exceeding 68° Fahrenheit, within doors, are prime conditions to the successful treatment of dysmenorrhœa. By attending rigidly to these important points, constipation will be obviated, the circulation of the blood equalized, the animal heat uniformly diffused, and all undue determinations of blood prevented. If, however, obstinate congestions have already set in, a few doses of suitable specifics will soon restore the organism to its normal condition.

The medicines to which we call attention are: *Aconite*, *Pulsatilla*, *Secale-cornutum*, *Belladonna*, *Cannabis-ind.*, *Collodium*, *Cann.*, *Cyclamen*, *Nux-vom.*, *Platina*, *Ferrum*, *Coccus*, *Sabina*, *Conium*, *Graphites*.

Dysmenorrhœa, arising from an inflammatory condition of the uterus, and attended with marked febrile symptoms, quick pulse, hot skin, thirst, rapid respiration, headache, and general restlessness, demand the employment of *Aconite*.

If the menses are scanty, and accompanied with cutting pains in the

uterine region, abdomen; back, and loins, vertigo, loss of appetite, chilliness, nausea, and discharge of thick, black blood, alternating with short discharges of bright-red blood, we may resort to *Pulsatilla*. If the pains shift about from one point to another, the indications are still stronger. *Pulsatilla* also operates best when the derangement has arisen from fright, grief, mortification, or from exposure to wet and cold.

When the menstrual irregularity proceeds from uterine congestion, and presents us the following tableau of symptoms, viz.: violent spasmodic or bearing-down pains from the small of the back to the uterus, with tenesmus and pressure on the bladder and rectum, coldness of the extremities, rapid and feeble pulse, frequent and severe contractions of the uterus, *Secale-cornutum* should be employed.

Belladonna is an admirable remedy when the patient is of a plethoric habit and sanguine temperament, and the disorder has originated from some violent mental emotion, and is attended with serious determination to the brain. It may sometimes be employed with advantage in alternation with *Aconite*. *Belladonna* and *Coccus* in alternation have, perhaps, been more generally successful than any other remedies.

Nux-vomica is valuable in scanty and painful menstruation, from uterine congestion, arising from scybalous accumulations in the colon and rectum. The pains are of a spasmodic character and extend from the uterus to the neck of the bladder, and into the abdomen. Considerable gastric derangement usually attends this variety of dysmenorrhœa.

Platina, *Ferrum*, and *Sabina* are applicable in that variety in which the menstrual discharge is sufficient, or even in ordinary quantity, but is attended with severe bearing-down pains in the uterine region, cutting pains in the back, loins, and thighs, pressure in the groins, cramps in the abdomen, blood dark, and containing membranous shreds, and too frequent appearance of the menses.

For uterine and abdominal spasms, nausea, faintness, impeded respiration, and a scanty discharge of coagulated blood, mixed with mucus, we may give *Coccus* or *Conium*.

Graphites is an important remedy when the menses appear too late, and are too scanty. The uterine discharge is thick and dark, there are severe labor-like pains in the pelvis, also cutting pains in the abdomen, small of the back and hips, vertigo, constipation, chilliness, cold hands and feet, and general lassitude and debility.

ADMINISTRATION.—The medicines may be employed at the first, second, and third attenuations, and repeated every two hours during the more severe symptoms. The remedy should also be given once in two or three days, during the intervals between the monthly epochs.

Sabina.—*Case by Dr. Fanning, of Brooklyn.**—A lady, aged twenty-four, medium height, dark complexion, and hair, nervous temperament, fond of music. Dysmenorrhœa for four years, with violent headache; period generally delayed, flow lasting about seven days, coming on a few minutes at a time, then ceasing for six or eight hours—bright clotted, without flow. Pain begins an hour or two after the flow of blood begins, the pain starts in the epigastrium going to the back; feels generally obstruction internally; dragging pain in the back and deep-seated pain throughout the lower limbs; walking aggravates, warmth diminishes it. Pain in the fore-head and eyes, aggravated by stooping and walking, relieved by pressure; nausea, occasional vomiting; fever, perspiration, cold hands and feet; pulse 120. Pulsations through the body. Fever and pain diminish on the second day. Slight leucorrhœa in intervals. Directed powders of Sabina 200, two every week till the next period is passed. Dissolve a powder in a half tumbler of water, a teaspoonful every two hours while the pain continues severe. The next period was delayed three days; attended by lighter degree of the old symptoms. Third day less feeling of obstruction than usual, no unpleasant symptoms afterwards. The next return delayed forty-eight hours, the flow more natural, no pain or pulsation complained of; feeling of obstruction lasted only two hours, no sensation after the first day. Third period, return just four weeks; flow slight for two days, lasting slightly for eight days, but no pain. Two weeks after, severe dragging-down pain, lasting three hours, relieved by one powder. The fourth return was perfectly regular in all respects.

Cyclamen-Europaeum, (*Hahnemann's Materia Medica Pura*, Vol. V., p. 40–60): *Symptoms:* “Sudden stupefaction, vertigo and dull-pressing headache; obscuration of the sight, dilatation of the pupils; drawing pains in the nape of the neck, and in the teeth; nausea, eructations, loathing and aversion to food, and hiccough soon after eating; stinging griping pains in the abdomen; sensation of general discomfort; flatulence and desire to urinate. Oppression of the chest, pressing pain in the chest, stinging and drawing in the back; laming pressure, drawing and stinging in the extremities; weakness, itching, peevishness, sleepiness, lassitude, sleep disturbed and interrupted by bad dreams, chilliness of the whole body alternating with heat; loss of thirst, disinclination to labor or to speak, excessive sadness, melancholy, occasionally joyful feeling and lively fancy.”

*The Vienna proving** adds to the above: Menstruation more profuse. Repeated appearance of the catamenia. Menstruation attended by severe abdominal pains. Reappearance of long-suppressed cata-

* American Homeopathic Review, Vol. III. p. 31.

† Zeitschr. des Vereins der hom. Aerzte Oesterreichs, 2. Bd., S. 445–488

menia, (curative effect.) Menstruation increased in quantity, black and lumpy, and attended by hard labor-like pains.

Dr. Eidherr, of Vienna,* says: At the Leopoldstadt Hospital and at the Dispensary connected with it, he saw this remedy tried in thirty-four cases. He found it "very efficacious with blond, leucophlegmatic subjects in whom, besides retarded, suppressed, or scanty menstruation, or complete chlorosis, there were also: "disinclination for any kind of labor; fatigue from slight causes; yawning; continual sleepiness; snoring, deep sleep, or sleep disturbed by anxious dreams; chilliness over the whole body, which no amount of covering will relieve; vertigo; sensation as if the brain wabbled about while walking; stupefaction and fullness of the head; periodical congestion of blood to the head, with paleness of the face; stinging pain in the forehead and temples; glimmering before the eyes; attacks of faintness with cloudiness or obscuration of sight; occasional diplopia; roaring in the ears; frequent nausea; inclination to vomit; or vomiting of food or of watery liquid; aversion to ordinary food, and desire for edible things; frequent recurring colic-like pains; strangury with fruitless efforts; ill humor; disposition to weep; fear of death or an illusion of being deserted, or persecuted by every one."

Case by Dr. Eidherr.—A young lady of twenty-four years, light hair, pale delicate skin, pale lips and gums, menses regular till two years ago when suddenly suppressed by exposure to rain. After many domestic remedies were tried they came on amid excessive labor-like pains, returning in the same manner, only at intervals of two to four months. Her condition became highly anæmic, pressive pain in the fore-head, vertigo, fits of fainting, chilliness of the whole body; unrefreshing sleep broken by fearful dreams, aversion to food, vomiting in the morning, and pain in the back. *Cyclamen 15° (decimal)* restored her completely. A few days after taking it the menses appeared, and again three days before the next period; also at the third period; after which she continued well.

In this case and in two others the *Cyclamen* produced diplopia.

Case 2.—A lively girl, aged sixteen, fretful and melancholy after suppression of the menses for a few months; she lost all interest in the ordinary concerns of the family circle, refused to walk in the open air, and slept unusually late in the morning. At the end of three months she showed swelling of the eyelids, pale lips and gums, and heart's action violent; always felt tired, had frequent pressive pain in the forehead, vertigo, diminished appetite and constipation. *Cyclamen 15°*, continued for three or four weeks, restored the menses, and her general health was soon fully established.

* *Allgemeine Homeopathische Zeitung.* July, 1859.

Macroton.—The Macrotrys-cimisuga, Black-cohosh, Squaw-root, Black Snake-root, or Bugbane, is an old remedy for rheumatic diseases. Dr. Hale says: "It is homeopathic to nearly all rheumatic, neuralgic, irritable, congestive states of the uterine organs. It causes symptoms similar to those met with in pregnant women, thus: great and general nervous prostration, and irritability; neuralgic pains in the head, back, and uterine region; feeble, slow or quick pulse, palpitation of the heart, sick headache, sensitiveness of the uterus; swollen, tender, and abraded condition of the cervix; with aching dragging pains at each menstrual period. It resembles Aconite, Bry., Colch., Nux, and Bell." He gives the second or third trituration.

It is reputed to be anti-spasmodic, narcotic, tonic, emmenagogue. It has been successfully used in dysmenorrhœa, sterility, chorea, hysteria, and as a parturient.

Given in over-doses of from three to five grains it produces: slight dizziness, fullness, dull aching in the head; aching in the joints. It has been used in neuralgia, asthma, splenitis, pertussis, delirium tremens, and gonorrhœa. *Immediate Effects:* Like Digitalis it disorders the sensorium, increases secretion and absorption; in full dose it prostrates to an alarming degree, producing vertigo, nausea, pains of the extremities, anxiety, dilatation of the pupils, quick small pulse, with general restlessness, uneasiness. *Remote Effects*,—the reverse of the above. It has the power of lessening arterial action, and increasing general energy. Tincture from the root: Used in chorea by Dr. Hildreth. (*Amer. Jour. Med. Sci.*, Jan., 1843. Also by Dr. Kirkland, *ibid.*, 1840.)

Aconite in States of Pregnancy, and Subsequent Conditions.—A woman, aged thirty-four, and in the seventh month of pregnancy, was attacked with vomiting so violent that she supposed herself to be poisoned. Ipecac., Stibium, Nux-vomica, and Cuprum were of no service. There were lancinating pains in the stomach; extreme, and continued anguish in the praecordial region, augmented by each act of vomiting; vomiting of such violence that the patient in the end threw up pure bright, red blood. The anguish increased to an extreme point; syncope supervened, and a miscarriage was imminent. The first dose of Aconite 200, produced tranquillity; the anguish and pain yielded to a pleasant sleep. Delivery occurred at the proper time. (Rückert.)

A woman of full habit suffered much during the last month of her pregnancy, with violent congestions of the chest. Aconite afforded so much relief that she could afterwards sleep tranquilly without fear of suffocating. (Griesselich, *Hygea*, Vol. V., p. 218.)

Morbid Phenomena of the Puerpural State.—A woman, aged twenty-eight years, was attacked on the third day after an artificial delivery with a violent shaking chill succeeded by: tumultuous febrile

disturbance, with a hard and frequent pulse; dry and hot skin, intense thirst; tongue dry and slightly coated, violent headache, fixed and ferocious expression; lochia arrested; breasts flaccid and without milk, violent pains in the bowels on the slightest touch; bowels a little bloated. An aqueous solution of Aconite 2, in spoonful-doses was prescribed every half-hour. There was an amelioration during two days, and then an attack of dysentery (in consequence of this unnecessarily large dose? (*Jahr*), which was cured by Belladonna. (*Bosch*, Vol. XIX., p. 103.)

An intelligent woman, on the eighth day after confinement, after having taken cold, was attacked with the following symptoms: considerable heat, and continual fever, with continued cutting and contractive pains in the bowels, tension of the bowels, and sensitiveness at the least touch; diarrhoeic stools every fifteen to thirty minutes; preservative and stupefying cephalgia; frequent and tense pulse; violent thirst; tongue dry and covered with a white fur, desire to vomit. The lochia were at first scanty and finally suppressed.

3. MENORRHAGIA.—UTERINE HÆMORRHAGE.

DIAGNOSIS.—Profuse uterine hæmorrhages may take place at any period of life from puberty to old age, and in every variety of constitution. But the most common kind of menorrhagia to which the attention of the physician is called, is that which happens during the periods of menstruation from a congestion or relaxation of the uterine secretory vessels. A certain amount of menstrual fluid is secreted each month, and this natural quantity is determined by the temperament, constitution, and habits of life of each particular subject. Thus, robust and plethoric females who live richly and drink wine, may lose a large quantity of blood at each period, and suffer no inconvenience from it; while individuals of delicate and relaxed constitutions would immediately experience ill effects from so profuse a flow. It is when this healthy, natural flux becomes morbidly augmented, that we apply to it the designation of *uterine hæmorrhage*, and deem it necessary to employ medical means.

Dangerous uterine hæmorrhages often occur during pregnancy, from disturbance or rupture of the membranes of the placenta, and also from concussions, blows, violent exercise, fright, anger, cathartics, and emmenagogues. The symptoms which precede menorrhagia, occurring at the menstrual periods, are: general uneasiness and dissatisfaction; petulancy; lassitude and sense of oppression in the head; weariness and wandering pains in the back, loins, and inferior extremities; sense of weight and pressure in the pelvis; chilliness; unnatural determinations of blood; cold feet, rapid pulse, and impaired appetite.

The symptoms attendant on the flux will depend entirely on the nature of the case, the constitution, and the amount of blood lost in each instance. In light cases of menorrhagia, the patient only experiences a general sense of lassitude, debility, weariness, faintness, tired and uneasy sensations in the back and limbs, indisposition to exercise, faint and death-like feeling at the pit of the stomach; paleness of the face, cold extremities, and feeble and unsatisfactory respiration.

In more serious cases the patient becomes almost ex-sanguineous; the face, lips, and surface become blanched; the muscular strength entirely prostrated; every attempt to move or converse induces immediate syncope; there is more or less determination of blood to the brain, as is evinced by sharp pains, delirium, ringing in the ears, and throbings of the carotid arteries; the vision is impaired; floats circulate before the eyes; respiration is oppressed; palpitation of the heart ensues from exercise or emotions; pulse rapid and extremely feeble; general coldness of the surface; great and undefinable uneasiness and nervous irritation. The blood gushes upon every exertion to change position, and on coughing, sneezing or vomiting. After the patient has become reduced by its loss to a very low state, frequent and protracted fainting turns come on; respiration and circulation become almost suspended; the blood clots at the mouths of the uterine vessels, and thus the flooding is temporarily arrested. As soon, however, as the organism reacts, these clots are liable to be expelled by the contractile efforts of the uterus, and the flowing reappears. These different conditions may occur several times during the progress of the disorder, until finally the patient is so completely prostrate that there is no reaction; the clots of blood are not expelled, and time allowed for the uterine vessels to recover themselves sufficiently to resist any further morbid secretion. Cases of this description are not uncommon, and the cures are often attributed to monstrous doses of Opium and Sugar of Lead, rather than to the kind offices of nature in inducing syncope, and a consequent coagulation of the blood in the uterus.

We have enumerated amongst the symptoms of the complaint *determination of blood to the head, and inflammation of the brain*. These symptoms have been so often observed in connection with profuse haemorrhages, and the question has been so often discussed, in regard to the propriety of blood-letting for the cure of a cerebral inflammation which has been *caused by excessive loss of blood*, that no one will deny the fact, that these symptoms actually occur as a direct consequence of menorrhagia. Examples of this kind should teach the important truth, that *excessive loss of blood is always a powerful predisposing cause, and in very many instances a direct exciting cause of inflammation of the brain, lungs, and other structures*. It

ought also to induce the exercise of a little reason in the therapeutical measures, rather than a persistence in the empirical routine of the old school of venesection, opiates, and astringents.

Menorrhagia originating in organic derangements of the uterus, like indurations, cancers, tumors, and ulcers, will be accompanied with the symptoms peculiar to these different maladies, in addition to their ordinary signs. Cases of this description will require careful attention, both in a diagnostic and in a therapeutic point of view. Thus, if the disease be dependent on a scrofulous or psoric diathesis, or a syphilitic taint, our remedies must be directed as well to these original and general causes as to those which are more immediate and local. By this means we may strike the silent and invisible enemy, while subduing others which are manifest to our senses.

CAUSES.—We include among the *remote* causes of this affection, improper physical and moral education, excesses in eating and drinking, insufficient nutriment, scrofulous, syphilitic, or psoric taunts; pressure of the abdominal viscera downwards upon the uterus by mechanical contrivances; an ardent sanguine temperament, and a plethoric habit, or a lymphatic venous temperament, and a relaxed habit.

The *proximate* causes are: irritation, congestion, or inflammation of the secretory vessels of the uterus; the various disturbances and injuries occurring during pregnancy, and from accouchement, cancers, ulcers, tumors, sexual excitement, and stimulating drinks during the catamenial period.

PROGNOSIS.—A favorable termination may be expected when no organic affection exists, if the patient is moderately robust, and the disease depends upon simple local inflammation, or the accidents arising from pregnancy and accouchement. Many of the floodings, however, which proceed from miscarriage, from abnormal conditions of the foetus and placenta, and from accidents during delivery, require prompt, bold and judicious efforts in order to rescue the patient from fatal prostration. But no woman need bleed to death under any of these circumstances, if there is proper knowledge and decision on the part of the physician.

The circumstances which must render our prognosis unfavorable are: chronic induration or softening of the uterus; cancerous and other incurable ulcerations and tumors, and morbid growths within the viscera. But, even in these apparently hopeless cases, we should never despair, for the resources of homœopathy sometimes surpass our most sanguine expectations.

THERAPEUTICS.—After having removed as far as possible all disturbing causes, a suitable remedy may be selected from *Platina*, *Pulsatilla*, *Belladonna*, *Ipecacuanha*, *Sabina*, *Secale-cor.*, *Ferrum-met.*, *Arnica*, *China*, *Chamomilla*, *Sepia*, *Bryonia*, *Nux-vom.*, *Car-*

bo-animal., Acid-phos., Hyoscyamus, Crocus-sativa, Creosote, Hammamelis, Collinsonia.

Platina is particularly suited to females of a sensitive and impresible organization, and who suffer from too frequent and too profuse catamenia. The flow is accompanied, and occasionally preceded, by cutting and pressing pains in the abdomen, back, and pelvis; dull pains in the groin and thighs; sensation of fullness in the uterus; chills, alternating with flushes of heat; unusual sensitiveness of the genital organs; headache; sadness; debility; restlessness; leucorrhœa; menstrual discharge, red and fluid, or dark, thick and coming away in clots. This remedy is applicable in menorrhagia arising from *induration* or *cancer* of the uterus.

Pulsatilla is useful in menorrhagia occurring in females at the "turn of life," or from *scirrhous uteri*, or from simple passive congestion of the uterus, or during pregnancy and *accouchement*. The blood is generally dark and coagulated, and is expelled only at intervals, but in large quantities. In profuse haemorrhages after delivery, when the uterus does not contract, and the patient is much prostrated from pain and loss of blood, *Pulsatilla* is an excellent remedy. It may also be given in menorrhagia characterized by inconstant and shifting pains in the back, loins, abdomen, and pelvis.

Belladonna is our best remedy in superabundant menstruation proceeding from irritation and active congestion of the uterine vessels, and also in uterine inflammations consequent upon abortions, violent passions or protracted exposure. It is an invaluable remedy in cerebral inflammations arising from excessive uterine haemorrhage.

The general indications for *Belladonna* are: a plethoric habit; ardent sanguine temperament; frequent determination of blood to the head; strong passions; pressing pains in the small of the back and in the abdomen; sense of fullness in the uterus; full and rather rapid pulse; vertigo and pains in the head; nausea; ringing in the ears; partial loss of consciousness; inflammation of the uterus; profuse discharge of bright-red blood; flushed cheeks; brilliant and congested eyes; *scirrhous uteri*. *Belladonna* has been advised in alternation with *Arnica* and *Platina*, when the pains resemble those of labor, and there is a profuse discharge of bright-red blood.

Calcarea.—Two days after a dose of Sulphur, give one of *Calcarea*. Continue at intervals to alternate the latter with Sulphur, Nux, or China, till the next period comes on. During the excess give the appropriate remedy, whether *Belladonna*, *Sabina*, *Secale*, *Crocus*, according to the indication.

A young woman suffered from uterine haemorrhage on the least movement. She had also tubercular phthisis. *Sabina*, *Silicea*, and *Chamomilla* were only of temporary benefit. *Calcarea* permanently

eured the hæmorrhage and alleviated the phthisis. Dr. Black says: "Calcarea resembles Sulphur, Belladonna, Platina and China in its action on the uterus; and is indicated where there is a tendency to the too early and too profuse appearance of the menses—a state which we often see increasing or producing lowness of spirits, hysteria, &c."—(British Jour. Homoeop., Vol. I.)

Ipecacuanha may be employed when the catamenia appear every two or three weeks, attended with pressure in the uterine region, and profuse discharges of fresh blood.

Sabina.—Kave and Wedekind suppressed uterine hæmorrhage, with the aid of *savine*, which, as every one knows, causes this disease, and consequently abortion in women in health.

Sabina is indicated in menorrhagia during and after miscarriage, and at the menstrual period. The flooding is accompanied with bearing-down pains in the abdomen and pelvis; abdominal spasms; pains in the uterus; *ardor urinæ*, and profuse discharges of dark and coagulated blood, or of fluid red blood. *Sabina* is especially useful in protracted uterine hæmorrhages arising from a loss of tone in the vessels of the uterus, whether from previous disease or the weight and pressure of the fœtus in utero.

Cyclamen-europæum.—Menstruation profuse, too frequent, too early, appearing with violent pain in the abdomen, reappearing after long suppression (curative effect), menses accompanied with labor pain, the blood flows in large quantity, very dark and clotted.

Secale-cornutum.—Uterine hæmorrhage, flow profuse, debility increasing; great prostration; respiration becoming difficult; symptoms of excessive loss of blood; extremities cold, pulse becoming quicker and weaker. In cases of this kind Secale has a specific influence on the uterine contractions, and in this way it arrests the hæmorrhage. It has often been speedily arrested by five grain doses of Secale in powder. It has also been often done by one grain doses. Indeed it is successful in the cases in which it is appropriate, whether the dose is large or small.

Secale-cornutum is recommended in hæmorrhages arising from passive congestion of the uterus, cachectic habit, and debility, and want of tone in the uterus, from difficult parturition or disease. The general indications are: pale face, cold surface, feeble pulse, white lips, pains and tenesmus in the rectum and bladder; discharge of dark and offensive blood, increased on motion, cough or sneezing, great prostration; numbness, spasms, humming in the ears; obscuration of vision, loss of contractive power in the uterus.

Ferrum-metallicum is indicated in profuse hæmorrhages after parturition and at the monthly epochs. The discharge is attended with spasmodic and labor-like pains in the loins and uterine region; flushed

cheeks, hard and full pulse, hot skin, headache, hot and scanty urine, constipation, shudderings.

Arnica is our chief remedy in menorrhagia originating from mechanical injuries during pregnancy or delivery, or from blows, contusions, strains, &c.

China is applicable in haemorrhage proceeding from an asthenic condition of the uterus. It is especially useful in enfeebled and cachectic females, who flow too profusely after parturition, from an atonic condition of the uterus and its non-contraction. A general appearance of debility and exhaustion; blanched countenance, discharge of serous or thick, dark, and clotted blood, pale, sunken countenance; restlessness, constant fainting turns; soft and flabby muscles, coldness of the extremities, and the rapid and feeble pulse, point to this remedy.

Chamomilla is adapted to bilious and nervous constitutions, and may be employed in menorrhagia, attended with pains and pressure in the pelvis; ardor urinæ; tearing pains in the small of the back, uterus and legs, with frequent discharges of coagulated blood. It has also been highly commended in uterine haemorrhages occurring at the change of life. Females of an angry, violent, and quarrelsome disposition, derive most benefit from this drug.

Sepia may be used in cases proceeding from scrofulous and scirrhous affections of the uterine organs. It is likewise advised in protracted chronic cases, where the system has become much exhausted from previous disease and suffering.

Bryonia agrees with bilious and choleric females, and is commended in menorrhagia attended with stitching pains in the head, back, and pit of the stomach, when stooping or stepping.

Nux-vomica will apply in cases of menorrhagia from uterine congestion, accompanied with spasmodic pains in the uterus, and a discharge of clots of dark-red blood.

Carbo-animal. has been successfully used in a few cases of moderate uterine haemorrhage, from chronic induration of the uterus.

Acid-phosphor. is specific in too profuse menstruation, attended with swelling and pain in the liver.

Hyoscyamus is specific in superabundant menstruation of hysterical females, who experience before and during the continuance of the flow, general spasms, convulsive laughing or weeping, twitching or trembling of the limbs, headache, and occasional delirium. The discharge is bright red.

Crocus-saliva corresponds to active or passive uterine haemorrhages. It is useful after miscarriage, when the discharge is very profuse, dark, and viscid, and the patient is anxious, feeble, chilly, faint, sick at the stomach, restless, thirsty, and annoyed with palpitation of the heart, vertigo, impaired vision, vague pains in the back and pelvis,

and unpleasant dreams. Movement and coughing increase the hæmorrhage.

Creosote is advised in passive uterine hæmorrhages originating in general laxity of the uterine vessels. The menses appear too early, are too profuse, and accompanied with a leucorrhœal or ichorous discharge, which irritates the parts with which it comes in contact.

Hamnamelis and *Collinsonia* are appropriate and very efficient remedies in passive hæmorrhages of the uterus, dependent on an enfeebled and relaxed condition of the organ.

Trillium.—*Trillium*, as prepared by some pharmaceutists, is regarded as a good remedy in this disease. Dr. Hale says an experience of many years enables him to recommend it in the most severe hæmorrhages; also in profuse exhausting leucorrhœa, with atony, prolapsus and chronic engorgements of the cervix. Its analogues are: *Crocus*, *Sabina*, *Secale*, *Erigeron*, and *Lycopin*.

ADMINISTRATION.—In urgent cases of uterine hæmorrhage, we give the first attenuations, and repeat every half-hour until medicinal symptoms appear, or the flooding abates. In less dangerous cases, we repeat every two, three, or four hours, so long as is necessary. With the internal remedies, cold water may be applied to the pelvic region by means of cloths. The hips must be elevated and supported, while the head and shoulders are lowered, and the patient be kept cool, quiet, and free from excitement.

4. LEUCORRHœA.—FLUOR ALBUS.

DIAGNOSIS.—This disease is characterized by a discharge from the utero-vaginal structure, of a muco-purulent character, of a white, yellow, or greenish color, either thin and watery, or of the consistence of starch or gelatine. This discharge, in contradistinction to that of *gonorrhœa* arises from a benignant morbid action, and is *non-contagious*. The assertion of Hartmann respecting the identity of gonorrhœal and leucorrhœal inflammations—the difference, in his view, consisting only in the *location* of the disease—is evidently erroneous. This author defines gonorrhœa to consist of an inflammation of the female urethra and leucorrhœa of a similar inflammation of the mucous membrane of the vagina or uterus. The opinion falls to the ground when we reflect that the latter disease not unfrequently extends to the urethral mucous membrane, giving rise to ardor urinæ, burning pain on passing the urine, heat, fullness, and swelling of the part, and a purulent discharge, which is non-contagious. Leucorrhœal inflammation always originates from causes which have impaired the healthy tone of the mucous membrane; gonorrhœal inflammation, on the other hand, may arise from the *simple contact* of a drop of gonorrhœal mat-

ter with the most sound and healthy membrane. The former is the result of an ordinary inflammation, which is analogous in its character to that of catarrh and chronic bronchitis: the latter proceeds only from the application of a specific infectious matter, which develops a particular inflammation and a contagious purulent secretion.

The character of the discharge and of the symptoms will depend upon the location of the disease, its causes, and the amount of inflammation present. Inflammation of the *cervix uteri*, for example, causes a discharge of "white mucus, and when the inflammation is intense, tinged with blood." (*Hall.*) Acute vaginal or urethral inflammation gives rise to a purulent discharge of a yellow or greenish color, sometimes tinged with blood. A more chronic affection of the same parts induces a thinner, more glairy, and muco-purulent secretion. *Scirrhous uteri* causes an ichorous, bloody, and foetid discharge. In chlorotics, with deranged menstruation, the secretion is thin, serous, acrid, and of a lightish straw color. The discharge, which often accompanies pregnancy, is thick, glairy, and white or yellowish; but in some instances after delivery, more particularly in scrofulous and cachectic subjects, the matter is ichorous and highly irritating to the parts with which it comes in contact. In *polypi* of the uterus or vagina, the discharge is at first mucous, but when the tumors have attained some size, it becomes tinged with blood, and, in some cases of this kind, profuse haemorrhages occur. The signs which denote the existence of these tumors are, sense of weight and fullness in the uterus, dragging pains in the small of the back, bearing-down pains, and turns of profuse haemorrhage.

In light cases of leucorrhœa, the discharge is usually thin, glairy, transparent and starchy; but when the disease is thoroughly established, and the patient is of a delicate or cachectic habit, the fluid may be muco-purulent, serous, sanguous, and of a white, yellow, or greenish color.

As a general rule, the discharge is worse about the period of the monthly sickness, owing probably to the increased determination of blood to the parts during this natural phenomenon.

The diseases which are ordinarily accompanied by leucorrhœa are, amenorrhœa, chlorosis, polypus and scirrhous uteri, dysmenorrhœa, menorrhagia, prolapsus uteri, and chronic inflammation of the uterus, vagina, or urethra.

When the affection is inveterate and attended with an abundant discharge, the whole system becomes injuriously affected; the face assumes a pale or sallow color; the eyes are surrounded with dark or leaden-colored circles; the functions of the stomach and bowels are impaired; the patient experiences a weary, dragging sensation in the left side; there are also dull pains in the back, loins, and abdomen; cold extremities; nausea; palpitation, and dyspnoea after exercising;

lassitude; debility; feeble pulse; loss of physical and mental energy; partial or total suppression of the menses; increase or diminution of the sexual propensity.

These are symptoms to which protracted and severe attacks of leucorrhœa give rise; but the malady may exist for years, in a mild form, without the development of any of these consequences.

This disease is far more common in cities amongst the rich, indolent, luxurious, and dissipated than in the country. Indeed, the small number of births and the frequent miscarriages occurring in large towns are attributable in a great measure to the very common prevalence of this weakness.

Leucorrhœa has been considered one of the symptoms of *prolapsus uteri*; but we are of opinion that in very many instances, the latter is a consequence, rather than the cause of the former. This opinion derives support from the fact that fluor-albus often exists for years before the signs of prolapsus manifest themselves; and it is probable from this circumstance that the tone of the uterus becomes impaired, and the muscles and ligaments gradually lose their strength and contractility.

Leucorrhœa occurs at all periods of life, but is most common after puberty, and previous to the "change of life," when so many causes are constantly conspiring to induce free determinations of blood to the utero-genital organs.

CAUSES.—The conditions which predispose to attacks of leucorrhœa may be enumerated as follows: a lymphatic temperament; a scrofulous dyscrasia; general debility and relaxation of the muscular and membranous structures, whether from natural organization, or previous disease.

Amongst the more immediate causes may be mentioned, an inactive and luxurious mode of life; immoderate sexual indulgence; abortions; congestions and inflammations of the uterus and vagina; menstrual derangements; want of cleanliness; a humid atmosphere; scirrhus uteri; polypi, and other abnormal growths in the uterus; metastases of rheumatism; herpes; haemorrhoidal, catarrhal, and bronchial inflammations; the uterine debility and relaxation consequent on parturition, and too early exercise after confinement; neglect of mothers to exercise the office of nursing; and, finally, according to Marshall Hall, *undue lactation*.

All of these causes, doubtless, exercise an influence in the production of fluor-albus; but in the vast majority of cases the disease may be attributed to the combined operation of several of these influences, rather than to any single one. We may almost predict beforehand that the child, born of parents who have always lived in compactly populous cities, and who have indulged in their artificial habits, will

sooner or later, be afflicted with leucorrhœa. This is but one of the signs which indicate the gradual but sure progress of degeneration to which the luxurious and dissolute habits of large towns inevitably lead. In the first instance, indolence, stimulating drinks, overheated apartments, exciting theatrical exhibitions, romances, pictures, statuary, &c., all tend to divert the mind towards *sensual enjoyments*. Deprived, in a great measure, of those pure and sublime pictures which nature has so lavishly scattered throughout the country to please the sight, to elevate the mind, and ennoble and purify the whole being; and of the thousand sources of happiness which pertain to country life; they turn to artificial pleasures, and reap the fruits which are ever entailed by a violation of natural laws.

Is it strange then that fluor-albus is so common in cities? that the degenerate offspring of these *artificial* human beings should grow up so puny, so weak, mentally and physically; so prone to disease, and so incapable of performing properly those functions for which nature has designed them? If any one doubts the inferences which these remarks suggest, let him but observe the families of the wealthy and luxurious, who have inhabited large cities for two or three generations, and he will no longer doubt.

The Genital Organs of Females are affected by the sycotic poison in various modes, producing leucorrhœas with corrosive secretion, irregularities of menstruation in regard to quality and quantity of the secretion; unnatural sexual desire and great tendency to cancerous disorganization. The increasing prevalence of such manifestations of disease furnishes employment to a host of specialists among physicians, who in their short-sightedness, treat the local affections, without paying any regard to constitutional disease. Dr. Wolf says "the timely use of Thuja can alone radically cure and obviate all the evils to which the now existing ill-treatment has doomed the female sex."

PROGNOSIS.—Leucorrhœa often leads to prolapsus uteri, amenorrhœa, menorrhagia, abortion, anasarca, hysteria, and general debility; but it very rarely terminates fatally. By impairing in a gradual manner the energies of the system, it predisposes it to take on serious disordered action from slight causes, and thus becomes indirectly an important morbid agent. When the complaint is recent, and occurs in females of a morbid constitution, from some temporary congestion, difficult parturition, or medicinal injury, we may expect to remove it by the aid of suitable remedies, in a short period; but if the patient be of a lymphatic temperament, of a delicate, lax and serofulvous constitution, and subject to irregular menstruation, the disease will most probably baffle our best curative efforts, and persist, with a greater or less degree of severity, during life. In individuals of this description, the most insignificant causes are capable of inciting and perpetuating the

weakening discharge, so that in many cases it will prove a hopeless task to attempt to remove all the influences which exercise an injurious bearing upon the case. Even when the affection exists as the mere symptom of some other disease, it seldom subsides with the other symptoms, but is quite prone to degenerate into a chronic fluor-albus

Treatment.—There are several conditions which are absolutely essential to the successful treatment of this disease, the most important of which are: abundant active exercise in the open air; avoidance of venereal excesses, and of the pleasures of the table; a withdrawal of the thoughts and affections from all exciting, spectacles, from crowded balls and parties, from lascivious imaginings, from romances and intrigues; and lastly, frequent daily ablutions, in order to insure the most perfect cleanliness of the affected parts.

The vast importance of this last point cannot be too strongly insisted upon, for without a rigid attention to cleanliness, all our efforts will prove futile. The morbid secretion is at best sufficiently irritating, but when it is permitted to accumulate and remain for a long time in contact with the mucous membrane, it becomes partially decomposed, fœtid, and highly pernicious to the well-being of the parts. On this account, the constant and thorough use of local applications of tepid or cold water, as circumstances require, should be strictly enjoined. We may then carry out our remedial measures in all their details, with a reasonable prospect of success.

We call attention to the following remedies: *Calcarea-carb.*, *Sulphur*, *Stannum*, *Sepia*, *Iodine*, *Pulsatilla*, *Alumina*, *Lycopodium*, *Phosphorus*, *Coccus*, *Sabina*, *Secale-cor.*, *China*, *Arnica*, *Bovista*, *Aconite*, *Mercurius*, *Nux-vom.*, *Silicea*, *Psoricum*, *Copaibæ*, *Merecum*, and *Manganum*.

Calcarea-carb. is suitable in chronic leucorrhœa, affecting weak, scrofulous and cachectic females, and particularly indicated when the menses are too frequent and too profuse. The discharge is milky, transparent, mucilaginous, starchy, unirritating, and accompanied with itching of the parts, especially the pudendum; also lassitude; depression of spirits; pains in the chest and back; cough; and general debility.

When the complaint arises from a scrofulous, or psoric taint, anti-psorics, like *Sulphur*, *Stannum*, and *Iodine* will be required. The discharge in these cases is thin or yellowish, and highly irritating to the parts with which it comes in contact. The strength is also much impaired, and there are indications of pulmonary and scrofulous disorder, such as hectic fever; emaciation; loss of appetite; wandering pains in the chest; cough; profuse mucous or purulent expectoration; feeble and rapid pulse; night-sweats.

Sepia is suitable for females who are naturally delicate and sensitive, with clear and transparent complexions. The discharge is mu-

cous, white, yellowish or watery, mild or acrid in its nature, most abundant just before or just subsequent to the menses, and attended with itching and stinging pains in the genital organs.

Pulsatilla is an admirable remedy in leucorrhœa accompanying pregnancy. It is also useful when the disease occurs about the period of menstruation.

The discharge may be thin, acrid, and burning, or thick, white, and tenacious, like the white of eggs. Shifting, flatulent pains in the abdomen still farther point to *Pulsatilla*.

Alumina has proved successful in several varieties of fluor-albus; but is particularly indicated when the discharge is very profuse and acrid, most abundant during the day when walking, and previous to the menstrual periods, and attended with a burning and itching sensation in the genital organs and rectum.

Fluor-albus brought on by masturbation, and occurring at intervals, with a milky, serous, or reddish discharge, will be best covered by *Lycopodium*, *Phosphorus*, or *Coccus*. These remedies are suitable to lymphatic temperaments, to those who are highly sensitive to cold, and subject to catarrhal affections, and whose nervous systems have been morbidly excited.

Sabinae and *Secale-cornutum* are proper in fluor-albus, depending upon weakness of the utero-vaginal structure; also when arising from suppression of the menses; from miscarriage; from severe and protracted labors; polypi, and prolapsus uteri. The discharge is attended with itching of the pudendum, and inordinate sexual propensity.

China will serve our purpose when the complaint originates from excessive loss of blood, or other animal fluids, extreme debility from fevers, acute inflammations, abuse of drugs, insufficient nutriment, and respiration of foul air.

Bovista is applicable in fluor-albus occurring after the catamenia, with discharge of a thick glairy, and tenacious matter of a yellow or greenish color, and highly corrosive.

Arnica is indispensable in leucorrhœa originating from mechanical injuries during accouchement, from polypi, hydatids, and other morbid growths in the uterus or vagina, prolapsus uteri, and undue mechanical pressure from without.

Aconite.—In copious and viscid leucorrhœa Aconite is sometimes efficacious (*Molin*). The indications given by Hartmann are: leucorrhœa in patients who complain of a sensation of heat, with fullness and tension in the internal parts, continual tingling not disagreeable, but forcing them to scratch; burning on urinating; febrile symptoms.—(*Therap. II. p. 154.*)

Aconite corresponds to plethoric and sanguine constitutions, and to females who are subject to congestions and haemorrhages from differ-

ent organs. The discharge is purulent, yellow or greenish, and attended with ardor urinæ, heat, pain and fullness in the genital organs, quick and full pulse, hot skin, and other febrile symptoms.

DICTAMNUS. Hahnemann says: Störck, who had so intimate a knowledge of medicines, was on the point of discovering that the bad effects of the *dictamnus* which he observed sometimes to provoke a *mucous discharge from the vagina*, arose from the very same properties in this root which enabled him to cure a leucorrhœa of long standing.

When there is reason to suspect that the discharge is from a syphilitic origin, whether it be mucous, watery, or purulent, mild or corrosive, *Mercurius* is our best remedy.

Nux-vomica is recommended when the disease arises from irregular menstruation, abuse of stimulants, rich and indigestible food, with a very profuse sanguineous or yellowish and foetid mucous discharge, attended with cramp-like pains in the abdomen, constipation, sinking at the stomach, and palpitation of the heart.

Cases occur which will require the use of *Silicea*, *Psoricum*, *Copaibæ*, *Mezereum*, *Manganum*, *Nitric-acid*, to which the reader is referred.

Administration.—We advise the employment of the first, second, and third attenuations, the dose to be repeated once in twenty-four hours, until primary or secondary medicinal symptoms appear, when we may await the result for some days, or so long as the amendment continues. When the symptoms become stationary, we may again resort to the remedy.

5. INFLAMMATION AND ULCERATION OF THE OS AND CERVIX UTERI.

DIAGNOSIS.—There are but few local affections which give rise to so great a number and variety of constitutional phenomena as ulceration of the uterine os and cervix. At first view it would almost seem that this malady constituted an exception to the truth of the axiom of Hahnemann, that the visible symptoms actually present in any given case, make up the sum total of the disease, and are only to be heeded in our therapeutical applications. A patient presents herself, for example, with pains in the back and through the hips, constipation, impaired digestion, pain and pressure in the top of the head, debility, hysteria and hypogastric pains. These are the only apparent symptoms of the case, and a number of remedies might be selected, which would be apparently homœopathic, but all would prove useless. The fault in this, and in similar instances is attributable to a superficial and imperfect examination of the case rather than to any error in the proposition of Hahnemann.

In illustration of this, let us pursue the examination still farther. In reply to minute queries, the patient informs us, that she has had leucorrhœa, more or less from childhood; but not more observable since the occurrence of the symptoms enumerated than at previous periods. As this discharge is unaccompanied by painful sensations, and has existed as far back as she can remember, it is not viewed as an abnormal symptom, and would be passed by unnoticed, by an incompetent physician.

But the mere fact of the existence of a leucorrhœal discharge is not sufficient for the homœopathic physician, since different drugs affect specifically different portions of the utero-genital mucous membrane, producing in each instance discharges varying in color, consistence, and chemical composition.

So also leucorrhœal discharges vary in appearance and chemically, according to the particular seat of the discharge. Thus the mucous membrane of the body of the uterus is furnished with glands which secrete a peculiar fluid. Different grades of inflammation of this structure affect materially the quality and quantity of this secretion, and give rise to various forms of leucorrhœa. The best homœopathic remedies in these cases, are those which correspond most closely with the various morbid conditions, both with regard to the uterus itself, and the discharges which it furnishes.

The mucous membrane which lines the *cervix-uteri* is also furnished with mucous cysts or follicles, secreting a fluid composed of mucous corpuscles and plasma, and having a distinctly *alkaline* reaction. During the various changes to which the female organism is subjected during pregnancy, parturition, &c., this secretion undergoes those modifications which adapt it to the functions it has to perform. Inflammation of this part also gives rise to abrasions, granulations, ulcerations, and abnormal secretions which require specific remedies for their removal.

The external portion of the *os-uteri* on the other hand, secretes a fluid having an *acid* reaction.

So also the normal lubricating fluid secreted by the mucous follicles of the vagina is decidedly *acid*, and thus serves to retain the menstrual fluid in a liquid state during its passage through this canal. It possesses likewise the property of preventing the decomposition of coagula.

From what has been written it will be observed that the structures, which compose the utero-genital apparatus give rise, in a condition of health, to different secretions according to the functions they have to perform, and the causes acting upon them. These *normal* conditions should be thoroughly understood by the medical man, in order that he

may be able to appreciate exactly those various *morbid* conditions which so frequently occur in practice.

It is not sufficient to know that the utero-genital mucous membrane is subject to modifications, similar to those of the same tissues in other parts of the organism, when acted upon by morbid influences, and affected with inflammations, congestions, abrasions, ulcerations, hypertrophies, &c.; but he must be fully aware of the extensive sympathetic connections which exist between the uterine organs and other parts of the system. He must not only take cognizance of all visible phenomena, but he must be able to trace them to their latent, and often obscure causes. He must not rest contented with a mere detail of symptoms, given by the patient, however minute such description may be, but he must trace out all sympathetic relations, which may exist between the uterus and remote symptoms, and by peculiar and other examinations, by microscopic observations, and by chemical analysis, ascertain the actual condition of suspected organs, as well as the changes which may have occurred in the fluids secreted by them. By so doing, all variations from the normal standard may be recognized, a complete picture of the malady be obtained, and our remedial measures applied judiciously.

"There is scarcely an organ," remarks Dr. Bedford, in his interesting work on Diseases of Females and Children, "which is not, to a greater or less extent, through the agency of the nerves, in alliance with the uterus; and it is through this agency alone that we can explain why remote parts are almost always affected in both organic and functional diseases of the womb, whilst the patient, in many instances, experiences but slight pain in the uterus itself. This is what constitutes the stumbling-block in the treatment of uterine maladies; the pain in the head, the disordered stomach, the uneasiness in the back, &c., which are but the consequences of some derangement of the womb, being regarded as the disease. Remedies are applied to the head, stomach, &c., the patient experiences no benefit, and the practitioner derives no credit. The disease, in the mean time, is progressing insidiously, and often results in the destruction of health. The womb is supplied with nerves by the two great divisions of the nervous systems, viz., the cerebro-spinal axis, and the trisplanchnic nerves. The former presides over animal life, whilst the latter are essential to organic existence. The pain in the back and head—the results of uterine disease—is conveyed through the cerebro-spinal axis, whilst the organic derangements, such as are observed oftentimes to occur in the stomach, heart and digestive system generally, are due to the action of the ganglionic department."

It is obviously the duty of the physician then, in suspected cases, to ascertain the condition of the uterus by means of the speculum, and to

examine carefully the character of the secretions from the affected parts. By this means alone can he get possession of the most characteristic symptoms of the malady, and thus be able to select the most specific remedies.

In affections of other mucous membranes—of the throat, the urethra, &c., the physician could not make a proper diagnosis without an actual inspection of the diseased parts, and of the altered secretions from such parts. In throat ailments he must know whether there is inflammation or not—and if he finds it, whether it is acute or subacute, and whether it is benign, virulent, or erysipelatous in its character; or if there exist abrasions, granulations, or ulcerations; or affections of the tonsils, uvula, &c. The sensations arising from these various morbid conditions of the throat are much alike, and were the physician to prescribe remedies in accordance with these sensations, he would be constantly liable to error.

The same rule holds good with regard to phenomena which may be supposed to result from uterine derangements. Ocular examinations in these cases, are often essential to a thorough appreciation of morbid phenomena, as in the examples alluded to of diseases of the throat, urethra, &c.

In this connection the question appropriately occurs, whether it is not the duty of provers to ascertain by specular examinations the changes which are produced upon the uterine tissues during the action of drugs upon the female organism, and by chemical analysis to obtain a knowledge of morbid alterations occurring in the fluids secreted by these organs? Such examinations involve much trouble and many sacrifices, both on the part of the female and the physician, but the addition to our knowledge of uterine pathology, and of the pathogeneses of drugs with reference to these parts, could not fail to prove immensely valuable. By no other means can perfect similes be obtained between *morbid* and *drug-symptoms*.

CAUSES.—Ulcerations of the mucous membrane lining the os and cervix-uteri, result generally from previous inflammatory conditions which have been allowed to progress unchecked. In the first instance the inflammatory action is usually confined to the cervix; but in a short time it extends to the cervical canal, where it is apt to become permanent, in consequence of the numerous follicles contained in the mucous membrane of this canal, and of the monthly irritation caused by the passage of the catamenial fluid. The symptoms which indicate the malady in its incipient stage are, leucorrhœa, sense of weight and fullness in the uterine region, sacro-lumbar and ovarian pains, lassitude, disinclination to mental or bodily exertion, more or less swelling of the cervix, and tendency to hysteria. Other symptoms will be found in almost every case, but we have enumerated those which are

most characteristic, with a view of aiding the medical man in forming an early and accurate diagnosis. Of these characteristic phenomena, the copious albuminous leucorrhœa, is by far the most important, as it points clearly to inflammation of the cervix, and the canal. In health this secretion is much less in quantity, lighter in color, and of less specific gravity, than when local inflammation is present. In health it is composed of mucous corpuscles and plasma; while the leucorrhœal secretion is distinctly albuminous. In both conditions it has an *alkaline* reaction.

TREATMENT.—The treatment of the ancient school in these cases, consists of vaginal injections, mercurials, and what they are pleased to term tonics. This is the course which has been pursued by the routinists of this school for centuries, and which is still adopted by the great mass of their practitioners. Unmindful of the anatomical relations of the cervical canal and the vagina, and of the impossibility of reaching the former by local applications introduced into the latter, their local treatment has always proved inefficient, and often positively injurious. Commencing usually with astringents and finding no improvement to result from their use, they are often induced to employ more active preparations like Nitrate of Silver, Creosote, Chloride of Zinc, &c., and thus actually producing, not unfrequently, serious inflammation of the mucous membrane of this previously healthy structure. If the true cause of many vaginal and uterine maladies could be made known, many a physician would have cause to blush for the injury he has ignorantly inflicted.

But a few writers of recent date, having gained more correct views respecting uterine pathology, have repudiated vaginal injections, and advised the employment of remedies directly to the affected part, to the cervical canal itself. By means of caustics and other "vitality-modifying agents," they seek to change morbid inflammatory actions which tend naturally to extend and perpetuate themselves into healthy drug-actions which tend to speedy and curative resolutions. As Dr. Bennett expresses himself, "the object in view is to modify the vitality of the diseased tissues, and to substitute healthy, manageable inflammation for morbid inflammation."—(*London Lancet*, May, 1856, p. 398).

This is by no means an unphilosophical, or non-homœopathic view of the subject. All morbid actions consist essentially of modifications of the vitality of affected structures, and the tendency of such alterations is to produce functional derangements, and sometimes structural lesions. This accords with the expressed opinions of Hahnemann and other advocates of a vital theory of disease.

So, according to Hahnemann, all specific remedies, which act upon diseased parts, in such a manner as to modify their vitality and thus ena-

In the recuperative forces to effect curative reactions must be *homœopathic* remedies.

With regard to the malady under consideration, the question to be considered is whether the active "vitality-modifying" applications recommended by Dr. Bennett, or the vitality-modifying internal remedies of homœopathy, are best adapted to bring about the curative reactions. We believe that cures may be made by either mode, but so long as the inflammation has not superinduced abrasions, granulations, or ulcerations, we prefer specific internal remedies.

At present our knowledge of the pathogeneses of drugs, with reference to the uterine structures, is very imperfect. This is due not so much to a lack of medicines which exercise a specific action upon these parts, as to defective modes of conducting provings.

REMEDIES.—Against simple inflammation of the mucous membrane lining the cervical canal and the cervix-uteri, we recommend the following remedies:

Sepia.—Albuminous leucorrhœa. Leucorrhœa during the day, resembling milk, and accompanied with burning pain, and producing soreness between the thighs. Yellowish leucorrhœa. Watery leucorrhœa. Mucous leucorrhœa. Leucorrhœa with stitches in the uterus, and itching in the vagina. Corrosive leucorrhœa. Profuse mucous leucorrhœa, having a fœtid smell, with drawing pains in the abdomen. Prolapsus uteri, with a jelly-like leucorrhœa. Induration of the cervix-uteri. Discharge of blood from the vagina with prolapsus. Albuminous leucorrhœa, with pain in the back, and through the hips, frequent and painful urination, bearing-down pains in the uterine region, and a copious deposit of lithates in the urine. Leucorrhœa with pain and enlargement of the ovaries. We are in the habit of prescribing Sepia at the thirtieth attenuation. It is one of those substances which is nearly inert in its crude form, but when properly attenuated becomes a remedial agent of great power. Having repeatedly tested this drug in both *low* and *high* dilutions, experience has demonstrated that its remedial virtues are not developed until after the twelfth attenuation.

Secale.—Jelly-like leucorrhœa, alternating with metrorrhagia, congestion of blood to the uterus and ovaries, and bearing-down pains in the uterus. Albuminous leucorrhœa, with labor-like pains extending from the back to the uterus, incontinence of urine, and menstrual colic. Leucorrhœa and metrorrhagia in consequence of relaxation of the uterine and vaginal tissues. Albuminous leucorrhœa, with relaxation and swelling of the os, and spasmodic pains at the neck of the uterus.

Our experience with Secale has taught us to employ it in palpable doses, although we have seen remarkable curative results from the high dilutions.

Sabina.—Albuminous leucorrhœa, foetid, and yellowish, with drawing pain in the small of the back, open *os-tincæ*, heaviness and pressure in the pelvis, and irritation of the vagina and pudenda. Copious starch-like leucorrhœa, alternating with catarrh. Cramp-like pains at the cervix, with tenderness on pressure, severe pain during connexion, and sanguineo-mucous leucorrhœa.

As a general rule, we prefer to use this remedy in appreciable doses.

Pulsatilla.—Cutting pain in the *os-tincæ*. Albuminous leucorrhœa. Thin and acrid leucorrhœa. Amenorrhœa with thick, viscid leucorrhœa, vertigo, pressure on the top of the head, deranged digestion, drawing pain in the uterine neck, frequent and painful urination. Albuminous leucorrhœa before and after the menses, with severe pain in the small of the back and abdomen.

We rarely employ Pulsatilla below the sixth dilution.

Coccus.—Cervical or uterine leucorrhœa, coming off with a sudden gush when stooping, or making any unusual exertion, with pain in the uterus on pressure, tenderness of one or both ovaries, severe spasmodic pains in the neck of the uterus. Irregular and scanty menstruation, with leucorrhœa between the periods.

In our hands Coccus has proved most efficient at the 30th dilution.

Apis-mel.—Albuminous leucorrhœa, with bearing-down pains in the pelvis, pain in the small of the back, and through the hips, urging to urinate, painful sensitiveness of the cervix, chronic ovariitis, congestion and tenderness of the ovaries. Thick, tenacious, and offensive leucorrhœal discharge, with dragging pains in the back, pelvis, and hips, painful urination, and general prostration of the forces.

We advise the employment of this remedy at a low dilution.

Calcarea-carb.—This remedy is suitable for females of a scrofulous habit, and lymphatic temperament, and who are prone to affections of the mucous membranes. Hahnemann asserts that it is most useful in females who menstruate too frequently and too copiously.

It corresponds to copious leucorrhœal discharges, which have arisen from uterine congestion and subsequent metrorrhagia, to albuminous leucorrhœa from the cervical canal, with great lassitude debility, sinking and trembling at the stomach, irritability, depression of spirits, burning and shooting pains in the cervical region, too frequent and profuse catamenia, and itching of the genital organs; also to cervical leucorrhœa in scrofulous subjects, especially those who are suffering from *phthisis pulmonalis*.

Calcarea should always be prescribed in high dilutions, as its remedial power does not become developed until after the two attenuation.

Other drugs which exercise a specific action over cervical inflammation, are *Mezereum*, *Conium*, *Nitro-acid*, *Petroleum*, *Bovista*, *Borax*, *Platina*, *Kali-carb*, *Ferrum-iod*, and *Sulphur*.

Our attention has thus been confined to simple inflammation of the mucous membrane lining the cervix and its canal. We now proceed to glance briefly at some of the consequences of neglected inflammation of these parts. These degenerations are, abrasions, granulations, ulcerations, hypertrophies, displacements, &c.

It is proper to observe that there are wide differences of opinion among eminent men with regard to the frequency of inflammatory affections in the cervix uteri. Indeed, some deny altogether the existence of these inflammations, and their sequelæ, ulcerations, indurations, &c. Among this number we may name Dr. Lee, of London, whose experience in diseases of females renders his opinion valuable.

Others concede the frequent existence of inflammatory ulcerations of the cervix, but attach to them but little importance. Thus, out of 268 females examined by Dr. West, at the St. Bartholomew's and Middlesex Hospitals, he found that 125 were troubled with ulcerations of the cervix uteri. Dr. West, Dr. Tyler Smith, and a majority of European obstetrical physicians, now fully admit the frequent occurrence of these lesions; but from the fact that groups of symptoms resembling in all respects those which are supposed to proceed from ulcerations are often found in females unaffected by any uterine disorder, these gentlemen have concluded that these lesions possess but little pathological importance.

They deny therefore the necessity of directing special attention to this locality, and doubt the propriety of resorting to local "vitality-modifying agents" in the form of caustics, &c., but prefer to trust to internal remedial agencies which tend to invigorate the general health.

Another and an increasing class of practitioners no less eminent, deem these local lesions of the highest pathological importance, as being the sole cause of a large number of unpleasant symptoms and morbid conditions. These gentlemen have arrived at their conclusions after having made very numerous specular examinations during a period of eight or ten years. The amount of testimony which is thus brought out, both with regard to the frequent occurrence of these ulcerations and their frequent cures by the "vitality-modifying" local applications of Dr. Bennett and his associates, render the facts and most of the opinions of these medical men incontrovertible.

Within the past five years we have had occasion to make a large number of specular examinations in females suffering from uterine diseases, and in at least thirty per-cent. of these cases we have found either granulations or ulcerations of the cervix. It is true that we

have examined many who had no appearance of uterine disorder, and yet were troubled with most of the usual symptoms of ulceration, like pains in the back and through the hips, headache, impaired digestion, great weakness and lassitude, nervousness, leucorrhœa, depression of spirits, &c.; but in nearly all of these instances there were short periods when these symptoms were absent and the patients could take long walks without inconvenience, as in perfect health, a condition which we have never observed in those who were suffering from inflammatory ulcerations of the cervix. We also generally find uterine displacements in the latter class, as a consequence of inflammatory action, while in the former examples the uterus retains its normal position.

The question now arises, what is the best mode of treatment to adopt in cases of suspected ulcerations of the cervix? As it is a highly delicate matter for females to submit to specular examinations without a most urgent necessity, we are in the habit of employing, in the first instance, a judicious course of internal remedies, in conjunction with baths, cold water applications, bracing air, and other invigorating hygienic means, with the hope that the morbid phenomena may gradually subside without recourse to further measures.

The remedies which have proved most beneficial in our practice, are, *Secale*, (both *internally* at the 1st dilution, and by *injections* composed of one drachm to the pint of water, three times a day.) *Apis*, (internally and by injection.) *Thuja*, (internally and by injection.) *Sabina*, *Prenanthus*, *Ferrum-iod.*, *Mercurius-hyd.*, *Canabis-sat.*, *Cantharis*, *Sepia*, *Causticum*, *Calcarea-carb.*, *Sulphur*, *Kali-carb.*, *Kali-hyd.*, *Acidum-nitricum*, *Iodium*.

In our selection of remedies, it is indispensable that the utmost care be taken that all morbid phenomena should be covered by the drug. It is not sufficient that the mere *sensations* of the patient should be covered by the remedy, but the *pathological* condition caused by the medicine should correspond with those of the disease. The *kind* of morbid action should also be well considered, in order that the remedy may be well adapted in this respect. Thus we have occasionally met with morbid conditions of the utero-genital apparatus of a distinctly *sycotic* character. This kind of diseased action gives rise to lesions, not only of the *os* and *cervix uteri*, but of the vaginal mucous membrane, of the most serious description. Indeed, two cases of this kind have come under our observation, which have been long treated as cancers, and finally pronounced incurable by several distinguished gentlemen of the other school, and which were afterwards cured by the homœopathic specifics for *sycosis*, *Thuja* and *Nitric-acid*. These remedies were employed both internally and topically. Both of these patients had been reduced to a most pitiable plight by the empir

routine to which they had been subjected, but they were most promptly benefitted, and finally perfectly cured by the drugs alluded to.

In ulcerations occurring in scrofulous subjects, it is important that remedies of an anti-scorfulous character should be selected if possible, like *Calcarea*, *Sulphur*, *Kali-carb.*, *Kali-hyd.*, *Iodium*, &c.

Now and then intractable cases are met with in persons who have formerly suffered from syphilis. The ulcerations in such instances cannot be considered as actually syphilitic, but they are so modified in character in consequence of the previous malady, that anti-syphilitic medicines will be required to accomplish a cure. In this class of lesions, we often meet with hypertrophy and induration of the cervix.

The most appropriate remedies are: *Mercurius-Proto-iod.*, *Iodine*, *Kali-hyd.*, *Nitric-acid* and *Thuja*.

Obstinate cases are sometimes found which appear to be connected with a *psoric taint*. Females thus affected, are apt to complain of great itching, heat, and irritation of the pudenda and the vagina, and of itching, eczema-like eruptions in the vicinity of the labia and anus. We have occasionally observed an apparent connection between the leucorrhæal discharge and the external eruption—the former being much less in quantity, and in acridity, when the latter was most strongly pronounced upon the skin, and *vice-versa*.

Sulphur, *Sepia*, and other specifics possessing an *anti-psoric* influence are manifestly most applicable in these cases.

But by far the largest number of cases are due to simple, uncomplicated, but neglected inflammatory action. Difficult and tedious labors, accidents occurring during convalescence, which cause inflammation of the uterus and its appendages, like sudden checks to perspiration, over-exertion, lack of proper cleanliness, are amongst the most common causes of this affection.

In addition to our internal remedies, suitable hygienic measures should always be employed; for all agencies which tend to improve the general health operate as indirect means of cure. They may be termed with propriety, indirect vitality-agents, in contradistinction to the topical vitality-modifying agents of Dr. Bennett.

A pure and bracing atmosphere, and freedom from care, and from the necessity of exertion, should first be attained if possible.

Although we do not believe in the efficiency of the hydropathic processes, unassisted by other means, yet when judiciously employed as auxiliaries in the treatment they are undoubtedly of much value. Cold hip-baths, local shower-baths, cold general baths, wet compresses over the uterine organs, and enemata of cold water may all be prescribed with benefit in certain cases.

It must not be forgotten, however, that cold water is a very powerful agent. By its use we may allay inflammatory and other morbid

actions in accessible parts of the organism, and restore the tone and functions of weakened and relaxed organs; while by its abuse the vitality of the system may become so much impaired as to cause serious and permanent injury.

In nearly all cases of inflammation and ulceration of the *os- and cervix-uteri* we have long been in the habit of prescribing cold hip-baths, cold water injections, and applications of wet bandages over the uterine region. When these measures have been properly carried out, more or less advantage has been derived, and we are unable to recall an instance of decided injury from the practice. Such is our experience with regard to cold water applications as auxiliaries in the treatment of the malady under consideration.

We now come to the question whether topical applications in the form of caustics, and other local vitality-modifying agents are ever justifiable in this class of maladies. That there *are* drugs sufficiently homœopathic to inflammatory ulcerations of the *cervix uteri*, to meet the requirements of every case, we entertain no doubt. And that such specifics will eventually be found—specifics which exercise as sure a control over these morbid conditions, as Mercury exercises over syphilitic ulcerations, we fully believe. But at present we know of no medicine which has actually produced in the healthy prover inflammation and ulceration of the *cervix*. All of those drugs which we have enumerated operate in various degrees upon the *utero-genital apparatus*, and give rise to leucorrhœa, sacro-lumbar pains, headache, deranged menstruation, bearing-down pains, hysteria, impaired digestion, and other symptoms which are supposed to be characteristic of inflammatory ulceration of the uterine neck, but we are not aware that actual ulceration has been found, as a pathogenetic symptom, in a single instance. When our provings are conducted with reference to this point,—when the exact local changes produced by drugs are observed by means of the speculum, when the color, consistency, and chemical character of discharges caused by drug-actions shall be thoroughly understood, then may we expect to prescribe successfully internal remedies for the cure of these diseases.

In consideration of the fact that many cases cannot at present be cured by any known internal remedies of our school, it behooves us to inquire whether we must depart from the therapeutic axiom *similia similibus curantur* to accomplish our object. If we have a correct idea of the true spirit of the teachings of Hahnemann, the end may be attained by the employment of topical vitality-modifying agents, and still adhere strictly to the homœopathic law of cure.

In all diseases the vitality of the affected tissues is changed, the power of the nerves and blood-vessels, supplying them is impaired, their normal functions are altered, and inflammations and their seque-

These are the results. Here *morbid* vitality-modifying agents, either *internal* or *topical*, have produced the mischief. These *morbid* influences are conveyed, either through the circulation, or directly to the structures to be acted on, and there produce those impressions which cause disease. Diseases, therefore, according to Hahnemann and other vitalists, consist essentially in modifications of the vitality of the parts involved.

Reasoning from analogy, it might be inferred that *remedial* vitality-modifying agents should also be conveyed, either through the circulation or directly, to diseased parts, in order that impressions may be produced which will result in health. If it be the object so to modify the vitality of morbidly affected tissues by specific drugs, as to arrest morbid degenerations, and substitute in their place healthy medicinal actions, it can be a matter of but little importance whether we bring them in contact with disordered parts through the stomach, endermically, through the veins, or by direct applications. It is manifestly the office of the homœopathic physician to operate directly upon parts diseased, and so to alter the vital conditions of such parts, that the *vis medicatrix naturæ* (which is the actual curer of all maladies) may be able to accomplish the requisite curative reactions. In diseases the recuperative forces of the organism struggle to restore the impaired vitality by causing, in affected localities, increased determinations of blood, increased heat, increased sensitiveness,—in a word *inflammations*. If the morbid influence be slight, nature alone removes the difficulty; but when the acting cause is more serious, the disease makes progress, destructive lesions occur, and the patient steadily sinks, notwithstanding the kindly efforts of the *vis viva*, unless a drug impression is made which changes the *morbid* to a *healthy* action. This is our platform. This is our interpretation of the ideas of Hahnemann, both with regard to the essential nature of diseases and a curative law.

In all cases therefore of ulceration of the *os* and *cervix-uteri*, which resist treatment by internal remedies and the other means which have been enumerated, we are in the habit of cauterizing the ulcers with the Nitrate of Silver. These applications we repeat every four, six, or eight days according to circumstances, until the ulcers assume a healthy appearance, and the healing process becomes satisfactory. Nor is it in ulcerations alone that Nitrate of Silver applications are homœopathic; for abrasions, with destruction of the epithelium, and granulations of the uterine *os* and *cervix* may be *produced* by applications of the solid nitrate in health, as well as *cured* by similar applications when they exist as morbid phenomena.

It must not be forgotten that in a majority of cases of leucorrhœa, whether accompanied or not with inflammatory ulceration of the

mucous membrane lining the cervix, that the cervical glands are in a morbidly-excited condition. We shall not stop to inquire in this place whether this morbid condition is the "primary and essential disorder" as Dr. Tyler Smith asserts, or whether the morbidly-increased cervical secretion is the cause of inflammation, which secondarily induces granular conditions, ulcerations, indurations, &c. It is quite certain that the glandular apparatus of the cervical canal is always morbidly active in these cases, and that this condition exercises an important influence over the entire malady. Under these circumstances, we should endeavor if possible to select those remedies, which impress specifically the glandular system, like *Iod.*, *Kali-hyd.*, *Merc.-hyd.*, &c.

Auxiliary to applications of Nitrate of Silver, the occasional use of astringent and tonic vaginal injections may be prescribed. By cleansing the ulcers from acrid secretions and gently stimulating the diseased parts we derive much advantage during the process of cure.

With reference to other topical applications advised by Dr. Bennett, like Potassa cum Calc., Acid Nitrate of Mercury, and other mineral acids, the actual cautery, &c., our experience is decidedly against them, as being both unnecessary, and often positively injurious. The simple fact that their action cannot in all instances be confined to the ulcerated points is a sufficient argument against their employment.

Among the sequelæ of inflammation of the cervix, are hypertrophy, induration, and as a consequence of these last conditions, displacements of the uterus. Here again benefit may now and then be derived from local applications of Nitrate of Silver either in substance, or in dilution. These applications, in conjunction with suitable internal remedies, often effect permanent cures of obstinate and long-standing uterine displacements, like retroversion, anteversion, prolapsus, &c.

PROLAPSUS UTERI.—TREATMENT.—For the nervous and constitutional symptoms: *Aconite*, *Bell.*, *Cham.*, *Coffea*, *Crocus*, *Hyoscy.*, *Igna.*, *Mosch.*, *Platina*, *Puls.*, or *Sulphur*. Local applications of cool or slightly warm water; hip-baths, &c.

The most important remedies in prolapsus are: *Kali-hyd.*, *Mercurius-hyd.*, *Baryta-carb.*, *Calcarea-carb.*, *Iodium*, *Conium*, *Arsenicum-iodid*, *Nux-vom.*, *Sepia*, *Aurum*, *Belladonna*, *Secale*, and *Podocephalum*. Other remedies which have often succeeded are: *Alumina*, *Cantharis*, *Cinchona*, *Ignatia*, *Platina*, *Pulsatilla*, *Silicea*, *Stannum-zinc*, *Sulph.-cupri*. It is often necessary to continue the use of the proper remedy for weeks.

All artificial contrivances, in the form of supporters, pessaries, and the like, should be strictly avoided. Such appliances sometimes afford temporary relief, but by obstructing the venous circulation of the parts with which they are in contact, they are certain in the end to aggravate the complaint, and diminish the chances of cure.

6. SPERMATORRHŒA.

A disease which results from an excessive secretion and discharge of the semen masculinum, whether it be produced by masturbation, excessive venery, or occur spontaneously during the night, constituting what is technically called *gonorrhœa dormientium*."

The effect of an unnaturally excited secretion of a product so highly vitalized, and which constitutes the sole contribution of the male towards the preservation of the species, never fails, when long continued, to produce a long train of disorders, of the nervous and digestive, systems usually comprehended in the term, nervous exhaustion

Symptoms.—The intimate relation of the physiological function which yields this product with that which pertains to the nervous system in all its wide range of influence, would lead us to suspect that the latter would be the first to suffer. Accordingly we find that among the earlier and prominent symptoms of this disorder, there is marked impairment of the mental faculties. The patient is unable to concentrate his mind upon his business or his books; his memory becomes treacherous; his physical powers are weakened; his courage and energy fail; he is languid and debilitated; becomes hypochondriacal and misanthropic; has the most fearful forebodings, with a want of confidence in his own abilities; is dyspeptic, and prone to suffer from various derangements of the alimentary functions; loses flesh; sometimes becomes extremely emaciated; and all this without evidence of real organic disease."

These symptoms are sometimes accounted for on erroneous suppositions. One case is considered hypochondriacal, perhaps caused by excessive study, or excessive mental labor.

The following classification is given by Mr. Wilson (*Diseases of the Vesiculae Seminales, London, 1856, pp. 106*):

I. *Spermorrhœa Sthenica* or *Entonica*.

Structure.	Disease.	Function.
Variety, 1 Testes	Orchitis.	{ Excessive secretion; relative deficiency of spermatozoa.
2. Vesiculae Seminales—Vesiculitis.		{ Excessive secretion with inspissation.
3. Prostate Gland—Prostatitis.		{ Excessive secretion; increased amount of salts.
4. Urethra—Urethritis.		{ Excessive secretion.

Species.

II. *Spermorrhœa Asthenica. Spermorrhœa Atonica.*

Structure.	Disease.	Function.
Variety, 1. Testes.	Atrophy.	{ Impotence, watery secretion, absence of spermatozoa.
2. Vesiculae Seminales,	Irritability.	{ Watery secretion and salts; deposit of calculi.
3 Urethra.	Ulceration.	{ Purulent Discharge.

Diagnosis.—Microscopic Appearances of the Fluid of Involuntary Emissions.—A gentleman had dyspepsia for several years, with a great variety of nervous symptoms; was extremely hypochondriacal. No difficulty about the bladder or urethra, and did not believe that any semen passed at stool. The microscope showed the urine to contain many filaments of mucus, nucleated cells, and granules. When it had been well shaken and allowed to pass through the filter, many spermatozoa were found in portions that remained upon it. When it was evaporated in a glass, it deposited many of the crystalizable and saline constituents of urine. After long standing, the microscope showed many vibrios, animated points, like grains of sand moving very rapidly and revolving on themselves. These are said to be not often detected, unless in the urine of the debilitated.

The galvanic current will often detect the presence of semen in the urine, in cases where the ordinary tests fail, by throwing down copiously the albumen of which it in so great part consists.

Pathology.—The secretion of the mucous membrane of the urethra is usually acid, but at times an alkaline reaction predominates, arising from a peculiar pathological condition of that membrane. When either the acid or alkaline reaction is in excess, the deterioration of the qualities of the fecundating fluid is likely to happen; which deterioration by destroying the spermatozoa, will at the same time very probably destroy its fertilizing qualities. Conditions of excessive acid and alkaline secretion have been shown to be not uncommon in the mucous membrane of the vagina and uterus, and to this condition sterility is, no doubt, often to be ascribed.

The mucus secreted by the prostate gland is charged with more or less of the phosphates of lime and soda; and it is secreted and poured out in a situation where the peculiar properties of it in neutralizing salts are likely to be made available for an immediate use. It is not then probable that this secretion is formed without a purpose.

Causes of Spermatorrhœa.—The excessive discharge of semen arises from an irritation established in or about the seminal ducts which convey the secretion from the testicle. This irritation may arise from "masturbation, from excess in sexual intercourse, from gonorrhœal lesions, mechanical or verminose obstructions, and irritants in the rectum, which act by pressing upon or irritating the vesiculæ seminales, or the prostate gland; haemorrhoidal fissures, prostatitis, or even from a stricture of the urethra."

It is not always easy to ascertain the true cause of the irritation on which the seminal flow depends. The patient will not always make a frank disclosure of the facts concerning his own case, though the essential ones may be known to him alone; and some who would do it to a physician who has at first gained his entire confidence, will be

driven far from it by a common degree of abruptness or indiscretion in the manner of conducting the investigation. The physician should strive to gain the unbounded confidence of his patient, and having gained it, should regard it as a sacred trust which is never to be violated.

Treatment.—Local Measures.—Hip-bath, warm or cold. *Warm Hip-bath.*—The patient should sit in it five minutes thrice daily; the water at the temperature of 65° F. The temperature may be lowered after some time to 50°, using it twenty minutes at a time. Sponging and frictions along the spine, or dashing cold water from a considerable height on the genital organs are beneficial.

Cauterization of the Verumontanum.—Case.—A man aged twenty-five had spermatorrhoea for two or three years, which produced vertigo, neuralgia, and a train of nervous symptoms impairing the general health and rendering him miserable. A sea voyage, travelling, chalybeates, shower-baths. The symptoms continued; he became despondent; gloomy forebodings; imagining every possible evil; slept little; tongue furred, pulse quick; hypochondriacal. When bougies were introduced there was perfect want of expulsive power of the urethra. Muriated Tincture of Ferrum, Tincture Cantharides, hip and shower-baths were tried for a month without benefit. He was afterwards cured by cauterizing the verumontanum. The genital discharge became less frequent; bougie left in for fifteen or twenty minutes at a time. The nervous symptoms gradually left him; he became cheerful; in a few months he was perfectly restored. (*Dr. Charles D. Smith, N.Y.*) A new instrument for cauterizing this region of the urethra was invented by Dr. Moore, of N.Y. city.

Moral Influence.—Masturbation, when it has not been entirely abandoned, must be at any sacrifice; and when it is not, it may result in insanity, dementia, catalepsy. The cheerful and grateful influences of good society are indispensable.

Mercur.—Dr. Ludlam gives a case of a German law student, aged twenty-four, presenting the following essential points: Masturbation was followed for four years, commencing at eighteen. Attempt two years ago at reform followed by nocturnal emissions once a week. The day following there was always "great weakness, both mentally and physically, spirits depressed; he became hypochondriacal, had frontal headaches, with more or less dimness of vision, without inflammation of the eyes; complete inability to study, both for mental and moral reasons; he became emaciated; from a weight of 144 lbs. he fell to 122 lbs.; great languor and lassitude. Desires to sleep most of the time. Anorexia; food does not agree with him; tongue coated with a yellowish fur; complexion and conjunctiva icterode."

This patient abandoned study; was directed to take out-door exercise, and was treated at the Chicago Homeopathic Clinique. *Mercur.*

solubilis, third trituration, repeated every four or six hours. Afterwards Phosphorus third; but, it increasing the hypochondriacal symptoms, was abandoned for Aurum, under which he improved rapidly, gained four pounds of flesh in five weeks, and had more strength than he had before in five years.

Digitaline.—This remedy has been successful in doses of one thirtieth of a grain, night and morning.

Lupulin has been alternated with it with success.

Neuralgic Spinal Disease resulting from Masturbation.—Dr. Kafka, of Prague, gives a case of an unmarried woman, aged thirty-three, with robust constitution, who had been troubled in childhood in pudendal itching, which led to the usual bad consequences. At twenty-five she became a mother, after which she lived secluded, working as a cook. Her health became undermined by generic irritation; stomach and limbs became enfeebled. She was neither pale nor emaciated, but two or three times a day, while at work, she had gastralgic attacks, pressure in the stomach, frequent eructations, a shaking sensation, great flow of saliva, and puffiness of the abdomen. Then followed heat, red cheeks, pressure in the head and morbid excitement. Her appetite had diminished; the tongue was covered with a yellowish fur; bowels constipated; clitoris rather enlarged, with slight vaginal blenorhoea. The spine was very sensitive in the region of the second, third, and fourth lumbar vertebræ, and the least pressure or mere friction upon them would call forth the whole series of symptoms affecting the stomach, head, and genitals. Menstruation was normal; great weakness of the knees, and want of memory. Though all of these derangements had been caused by persistence in her secret vice, she had not been induced to abandon it.

Treatment.—She took Nux-vomica third; a drop on a little saccharum-lac. twice a day. With this she was cured in about four weeks. After being perfectly well for three months, she returned, complaining of her old troubles. Eight doses of Nux-vom. again restored her, and she continued perfectly well and had no disposition to resume her old habits. In this case Nux-v. produced a marked effect upon the neurosis of the stomach, and on the abnormal excitement of the sexual organs. Hahnemann had directed attention to Nux-vomica as an aphrodisiac. M. M. Troussseau and Pidoux (*Traité de Thérapeut.*, Vol. I.,) made many experiments with allopathic doses of Nux-v., and observed particularly the marked increase of sexual excitement produced by the drug.

IMPOTENCE.—(*Hirschel's Archiv.*, 1854, § 158.) *Cuprum*.—A fresh colored young man, aged twenty-eight. Entire impotence for more than two years; some pain in the perineum; rheumatism in the back and legs; genitals normal. He used in small dozes, one ounce of Tinc-

ture of Acetate-Copper, and was perfectly well, and the pains disappeared. In other cases the tincture caused spermatorrhœa, and did away with the effect of Lupulin.

Phosphorus.—*Case of Dr. Spech, of Bucharest.*—A gentleman of delicate frame, dark complexion, had been treated for phthisis. Of libertine habits from his fourteenth to his twenty-fifth year; had several times had blennorrhœa and syphilis; was treated some years after marriage for impotence, by various mineral baths, without benefit. His symptoms were now as follows: extreme debility of all the functions; dry, short cough; pains in the chest; the entire muscular system enfeebled, and the nervous system much excited; no appetite; severe pain in the lumbar vertebrae, and very copious alvine evacuations, while a thin, slimy, colorless fluid oozed constantly from the urethra.

Treated with Phosphorus 30°. Six pellets every eight days for six weeks. He was then sent home perfectly restored.

1. GALACTORRHŒA.—TABES LACTEA.

Tabes nutricum of old authors. Redundant secretion of milk. In certain states of general health, and especially in scrofulous and anaemic constitutions, the secretion of milk becomes deranged, and an excessive flow may take place which proves highly debilitating, causing many nervous and digestive disorders, and tending indirectly to serious organic diseases.

The office of the mammary gland is to secrete and separate from the blood, the precise materials of structure which are necessary to the development of the young organism. When this process becomes morbidly accelerated it becomes exhaustive, and highly debilitating. The nutritive fluid is drained of its materials which had been accumulated for the mother's own support, and expended where it does no good. All the nutritive elements needed for the supply of the system, including proximate principles already nearly assimilated, fats, &c., have been detected unchanged in this secretion.

TREATMENT.—*Calcarea-carbonica.*—Croserio says, *Calcarea* increases the supply of milk when deficient. It is also effectual in correcting the secretion when it is in excess.

A case of agonizing supra-orbital neuralgia in which was the peculiarity that the use of milk always brought it on, was cured by *Calcarea*.

Belladonna possesses the power of diminishing the lacteal secretion when excessive.

Excellent results have also followed the use of *Nitrite of Uranium*, *Cannabis-indica*, and *Opium*, in cases of this kind.

8. CHLOROSIS.

GENERAL DESCRIPTION.—Young unmarried females of delicate lymphatic constitutions, slight figures, and highly impressible nervous systems, are by far most liable to attacks of chlorosis. In a majority of instances, it will be found that chlorotic girls have been remarkable from birth for delicacy of organization, daintiness of appetite, feebleness of digestion, and undue sensibility of the whole system. So long as this nervous sensibility is not over-tasked, no important causes operate to derange the delicate equilibrium upon which the proper operation of the functions depends, the individual enjoys passably good health, but when the period of puberty arrives, and nature calls for her monthly tribute from the vital fluid itself,—when new thoughts and new desires powerfully stimulate the system,—when, in fine, the important change of the whole organism, during the establishment of the catamenial function occurs, then the frail balance is destroyed, the digestive, absorbent, and assimilative functions fail, and those symptoms which mark chlorosis make their appearance.

- The disease sometimes attacks married females, even when considerably advanced in years; and it has likewise been observed in girls of two or three years of age; but cases of these kinds are of extremely rare occurrence. Men of studious and sedentary habits, especially those who have never taken much exercise, have been occasionally subjected to it.

Chlorosis is more common in cold than in warm climates. This circumstance is attributable in part to the pernicious custom in the north, of keeping children a large portion of the year in close rooms, at a temperature of 75° to 80° Fahrenheit, thus preventing that free development of the body which would result from pure air and abundant exercise. Another reason offers itself in the fact, that persons of frail, nervous, and lymphatic constitutions, often cannot withstand the severities of the temperate latitudes, without suffering more or less from disorders of the glandular and membranous structures.

DIAGNOSIS.—The symptoms commonly observed during the forming stage of chlorosis are: derangement of the stomach and bowels, manifested by a pale and bloated appearance of the tongue, foul breath, partial or total loss of appetite, morbid craving for certain indigestible articles, like coal, clay, acids, pencils, &c.; torpid state of the bowels; tympanitic distention of the abdomen, accompanied with occasional gripping pains; faecal discharges, composed of crude and imperfectly digested substances, unnatural in color and consistence.

Soon after the appearance of these symptoms, if the disease continues, the patient becomes listless, irritable, fond of solitude, and disinclined to bodily or mental exertion; the menstrual function becomes deranged; the face pale and tumid; the lips lose their color, the eye-

lids are swollen and surrounded by a dark, greenish, or yellowish circle; emaciation commences, the debility and lassitude become more apparent; many nervous and hysterical symptoms manifest themselves; dyspnoea, and palpitation of the heart, or "fluttering about the praecordia," (*Hall.*) occur from ascending stairs, from rapid walking, or violent mental emotions; the patient is troubled with vertigo, giddiness, and ringing in the ears and head; sleep is disturbed by unpleasant dreams; the spirits become depressed, and the ambition and energy are suppressed by apathy and indifference.

As the disease advances, all these symptoms become more strongly pronounced, and confirmed chlorosis is developed. The whole surface of the body now assumes a smooth and puffy appearance; the skin is dry pale, or yellowish, or lead colored; the muscles soft and flabby; the feet and ankles oedematous, the countenance very pallid and wax-like; the prolabia of a lilac color; tongue clean, bloodless, and semi-transparent; conjunctiva of a clear white color, or slightly tinged with blue; pulse feeble and somewhat rapid; occasional pains in the head, chest, stomach, side and abdomen; throbbing of the carotid arteries, perceptible to the sight and hearing; violent palpitation of the heart; dyspnoea, and "fluttering about the praecordia," after the slightest physical or mental exertion, and often during the night; catamenial secretion, superseded by a profuse leucorrhœal discharge; slight hacking cough on rising in the morning, and after exercise; frequent loose discharges from the bowels of a dark or black color, and very fetid, extreme prostration of all the energies; marked derangement of the functions of the liver, kidneys, skin, and indeed of nearly every part of the body.

It is not an uncommon occurrence for some of these symptoms to assume a serious local aspect during the progress of the complaint, and thus present highly troublesome and dangerous complaints. Marshall Hall enumerates these complications as follows:

First, pain in the back; second, cough and dyspnoea; third, palpitation of the heart; fourth, pain and tenderness of the side; fifth, pain and tenderness of the abdomen; sixth, constipation; seventh, diarrhoea; eighth, melæna; ninth, menorrhagia; tenth, tendency to haemorrhage; eleventh, purpura; twelfth, leucorrhœa; thirteenth, hysterical affections; fourteenth, œdema, anasarca, erythema nodosum.

It should be borne in mind that all of these complications are nothing more than *symptoms* of the original malady, and are to be treated only as such. But we deem it important to call special attention to these symptoms, to guard the inexperienced against mistaking them for distinct and independent affections. When either of them is particularly prominent, the careless diagnostician is apt to form an incorrect opinion of the case. Thus, frequent pains in the chest, vio-

lent palpitations of the heart on the slightest exertion, and an irregular or intermittent pulse, have often caused medical men to mistake an ordinary chlorosis for an organic affection of the heart; so have the cough and dyspnœa, apnoea, and the gastric and abdominal derangements which accompany chlorosis been mistaken for *phthisis pulmonalis* and *dyspepsia*.

We have included amongst the signs of chlorosis, suppression of the menses, but this is by no means an invariable symptom, as numerous cases are reported in which the catamenial secretion was perfectly natural and regular during the whole course of the complaint. We may safely infer, therefore, that it is not dependent on retention of the menses, as some writers have supposed.

We have already seen that many of the symptoms of chlorosis strongly resemble those of organic affections of the heart, pulmonary phthisis, dyspepsia, liver complaint, and dropsy; but a minute examination of the history and symptoms of each case, will always enable us to form a correct diagnosis. Thus, disease of the heart is attended with more pain and more febrile disturbance than chlorosis; the expression of the eyes and the appearance of the prolabia and tongue are also widely different. The pure white color of the conjunctiva, and the bilious and dark color of the faeces, will sufficiently mark the disease from *chronic hepatitis*. From consumption of the lungs, we may also recognize it, by absence of febrile exacerbations, the flushed cheek, the copious purulent expectoration, and the more general emaciation which occurs in that disease. There are also numerous symptoms by which we may readily distinguish chlorosis from dyspepsia and dropsy.

CAUSES.—There are several features connected with chlorosis worthy of much consideration in a pathological and therapeutic point of view, viz: first, the prominent gastric and intestinal derangement at the commencement of the malady; second, the small quantity of *crassimentum* in the blood; and, third, the peculiar state of the capillary system which gives rise to a hæmorrhagic tendency.

From the history of chlorosis it appears that the stomach and bowels are the first structures to take on disordered action. For some time previous to the appearance of the pale, wax-like and tumid countenance, the puffiness of the eye-lids, the loss of flesh, suppression of the menses, and other signs of confirmed chlorosis, we observe an impaired and delicate appetite, flabby and coated tongue, foul breath, imperfect digestion of food, unnatural stools, and all those traits which characterize a feeble and imperfect performance of the digestive functions. The symptoms which succeed are such as naturally result from such gastric and intestinal derangement.

These facts go far towards explaining the small amount of crassi-

mentum contained in the blood of chlorotic patients. If digestion, absorption and assimilation were normally executed, would not the blood receive its due proportion of crassimentum, and the muscles and integuments their appropriate supply of the red globules? The organs of the body are dependent for healthy action upon the stimuli of these red globules, which abound in oxygen, and serve to communicate to all parts of the organism its animal heat and vital power. Whenever, therefore, any cause operates upon the digestive and absorbent organs, in such a manner as to suspend their functions, the blood must fail of its due supply of red globules, and a derangement of all the organs ensue.

In some chlorotic patients, there is a peculiar tendency to *haemorrhages* of the nose, the lungs, the stomach, and the uterus. Bloody discharges have been known from the head, the side, palms of the hands, and limbs, in instances assuming a periodical form, in place of the menstrual discharge. On this account, the disease has been attributed by some to a laxity of the capillaries, and a consequent inability to exclude the red globules; but this relaxed condition of these vessels is owing to an absence of their healthy natural stimuli, the "oxygen carriers," rather than to any primary derangement in the capillary vessels themselves.

Other causes, which may contribute to the development of chlorosis in constitutions predisposed to it, are: close confinement in overheated and ill-ventilated apartments; studious and sedentary habits; protracted grief, anxiety, or fatigue; parturition, and its after-effects; leucorrhœa; amenorrhœa; unsatisfied love; masturbation; restraints of celibacy; frequent haemorrhages; crude and undigested food; chronic inflammation of the intestinal canal; enlargement and inaction of the mesenteric glands.

PATHOLOGY.—In the autopsical examinations of those who have died of chlorosis, the most notable signs of disease are found in the blood, the muscles, and the surface of the body. The blood of chlorosis appears to be deprived in a great measure of the red material and its place supplied by a superabundance of serum. This condition exists to a greater or less degree during the whole course of the disease, and it is on this account that the muscles after death present a peculiarly pale and bloodless appearance, and the skin a palish yellow, or wax-like tinge. Unnatural appearances are sometimes found in the chest and alimentary canal, in the form of an enlargement and dilatation of the ventricles of the heart, chronic inflammation of the lungs, the stomach, and the intestines, flabby and shrunken appearance of the liver and spleen, and unusual accumulations of serous fluid in the cavities, and in the cellular tissue.

M. Eisenmann, of Wurtzbourg,* says, chlorosis commences with nervous symptoms, which in some cases last for months before any appreciable alteration can be found in the blood. Spinal irritation is in many cases developed, and becomes so prominent a feature that it is often regarded as the essential disease. Important complications appear in: 1. Lesions of the spinal cord; 2. hæmorrhages; 3. ulcerations of the stomach and of the vagina. The hæmorrhage, so frequent among the chlorotic occurs from the nose, the eyes, the ears, the nipples or ends of the fingers in rare cases. It is more frequent from the stomach or lungs, sometimes from the brain. Death very often occurs in chlorosis from hæmorrhage. Cases are given of death from ulceration of the stomach.

PROGNOSIS.—This will depend principally upon the natural stamina of the patient and the severity of the local symptoms. A frail and delicate constitution, a highly susceptible nervous system, a decided predisposition to glandular and membranous disease, and an inherent debility of the digestive apparatus, are circumstances calculated to render the prognosis unfavorable. Patients of this description are rarely able to withstand the important changes which the economy undergoes at the period of puberty, without serious local disease, and often organic degenerations of some vital part. On the other hand, if the patient be of a naturally robust and sound constitution, even if the chlorotic symptoms are quite severe, we may generally predict an ultimate recovery. Here we may trace all the causes of the malady, and bend our efforts to their removal with a prospect of success, and thus restore the system to its original health and vigor; while a body which "has been sent into this breathing world before its time, but half made up," cannot be remodelled into one of "fair proportions" and vigor, by any resources of the physician, although much may be done towards prolonging life, and securing a moderately comfortable state of existence.

THERAPEUTICS.—In the treatment of chlorosis, we find of especial importance frequent exercise in the open air, either by gestation or moderate walking, highly digestible and nutritious regimen, and fresh or salt water baths. It is very desirable that chlorotic patients pass their winters in warm and equable climates, that exercise in the open air may be taken with advantage at all seasons. This is necessary on account of their extreme sensitiveness to the cold, which is often a serious obstacle against exposure to the low temperature of northern winters. The influence of sea air is often very beneficial to patients accustomed to inland districts, and *vice versa*. Short sea-voyages may sometimes be advised in the warm summer months, but caution should be exercised that the changes should not be too abrupt.

* Bulletin de Therapeutique, Sep. 30, 1859.

General bathing is also useful when properly employed. We should commence with tepid baths of fresh or salt water, and gradually diminish the temperature as the strength will admit, until an ordinary cold bath can be advantageously sustained. Sensitiveness to applications of cold water will frequently deter the patient from a persevering use of this powerful remedy, and rigid directions should therefore be given upon the subject.

A regimen of the most digestible and nutritious meats, as mutton, venison, beef, game, and fowls, with rich animal soups, should be enjoined. Other nutritious food, which the stomach will digest, may likewise be eaten. Wine, porter, and Scotch ale may be used at meals, if agreeable to the invalid. In brief, all of those articles which are calculated to enrich the blood with the red globules may be resorted to.

The remedies best adapted to meet chlorotic symptoms are: *China*, *Sulphur*, *Nux-vomica*, *Pulsatilla*, *Sepia*, *Ferrum-carb.*, *Platina*, *Calcarea-carb.*, *Conium*, *Arsenicum*, *Veratrum*, *Ferrum-aceticum*.

China.—Countenance pale or livid; lips blackish and shrivelled; mouth and tongue slimy; skin yellowish; oedematous swellings of the limbs; faeces hard or soft, foetid, mixed with undigested food, and of a dark or black color; offensive breath; copious leucorrhœal discharge; menstrual fluid scanty, and possessing but little color; suppression of the menses; haemorrhages from the nose, mouth and lungs; pulse feeble and more rapid than natural; general appearance indicative of an exsanguinous and debilitated condition.

Vertigo, worse when walking or during motion; humming in the ears; disagreeable taste in the mouth, generally bitter or insipid; unnatural appetite; canine hunger; pressure in the stomach after eating; distention of the abdomen by wind or water; morbid sexual desire, with involuntary emissions of semen; difficult and rapid respiration; throbbing in the sternum; palpitation of the heart; constant inclination to move the limbs; excessive sensitiveness of the whole nervous system, with general feeling of lassitude and debility; great dread of cold air; drowsiness during the day, but restlessness at night; sleep disturbed by frightful dreams.

Nervous, irritable, dissatisfied, taciturn, out of humor; indisposition to mental exertion; suspicious of dislike and abuse.

REMARKS.—*China* is eminently a specific in chlorosis, accompanied or induced by profuse loss of animal fluids, from epistaxis, haemoptysis, haemorrhoids, masturbation, involuntary emissions of semen, leucorrhœa, and diarrhoea. It is one of our best remedies when the disease is uncomplicated by any serious local derangement, and where simple debility of the whole organism is its essential characteristic.

Sulphur.—Face pale and bloated; eyes surrounded by blue or

greenish margins; swelling of the upper eyelid; glandular swellings about the neck and lower jaw; mouth and tongue slimy; foetid breath; distention of the stomach and abdomen; discharges from the bowels brown, and mixed with undigested food; acrid leucorrhœal discharge; profuse expectoration; short and rapid respiration; œdema of the feet and ankles; surface of the body covered with yellowish or brown spots.

Vertigo, dizziness and dullness in the head; humming or roaring in the ears; putrid or bitter taste in the morning; loss of appetite; craving for sweet or sour articles only; pressure of the stomach and abdomen, and dyspnœa after eating; throbbing at the pit of the stomach, with faintness; morbid sexual desire, with feeble procreative power; frequent involuntary emissions; menses too early and too profuse; burning leucorrhœal discharge; weakness of the chest when talking; short and difficult breathing on exercise, and on retiring to bed at night; frequent palpitation at the heart; stitches and pains in the chest when moving the arms; coldness of the feet; drowsiness in the day-time, but wakefulness and restlessness during the night; vivid dreams; night sweats; constant inclination to change position; general nervous irritation; sensitiveness to cold; internal coldness; lassitude and sensations of faintness;—all of which symptoms are without acute pain and are mitigated by rest and worse during motion.

Sadness, despondency, and inclination to weep without cause; ill-humor, obstinacy, sadness, silence, and frequent moaning.

REMARKS.—This medicine is advised for chlorotics of a lymphatic temperament, and those subject to frequent hæmorrhages. Also in chlorosis complicated with tuberculous ulceration of the lungs.

Nux-vomica.—Pale, yellowish, or clay-colored complexion; scleroteca natural; cheeks and eyelids swollen; tongue white; foetid breath; faeces foetid and dark colored; discharges of blood from the rectum; moaning and incoherent muttering during sleep.

Vertigo, giddiness, or sense of intoxication; tenderness of the scalp; ringing and hissing in the ears; putrid, bitter, or sour taste in the mouth; aversion to food of all kinds, and to tea and coffee; distention and oppression of the stomach after eating; nausea; bitter or sour eructations; throbbing sensation in the region of the stomach; flatulent distention of the abdomen, and colicky pains after eating or drinking; bleeding and painful hæmorrhoids; great irritability of the sexual organs, especially after waking in the morning; menses too early and scanty; frequent turns of nausea and faintness during the menstrual flow; asthenic respiration when walking, and at night in bed; palpitation of the heart after a generous meal; painful shocks in the præcordial region; sensitiveness of the whole surface of the

body; trembling in the limbs when walking; sleep disturbed by dreams, and so unrefreshing that the patient feels worse in the morning than in the evening; coldness of the feet.

Great sensibility to impressions; noise, bright lights, and strong odors are intolerable; sad; anxious; quarrelsome; taciturn; apprehensive of death.

REMARKS.—When chlorosis is preceded and accompanied by marked derangements of the alimentary canal, more particularly if the patient is of studious and sedentary habits, and has indulged freely in wines, coffee, or tobacco, *Nux-vomica* is indicated. Those who are naturally somewhat robust and of quarrelsome ardent, and vehement temperament will be more benefited by it than persons of a mild and phlegmatic temperament.

PULSATILLA.—*Sphere of Action.*—It acts pre-eminently upon the vegetative system, upon the organs of reproduction and their appendages, and upon the composition of the blood, depressing the action of the former systems, and producing in the latter a condition similar to that of one form of chlorosis. We learn these facts by bringing a knowledge of physiology to bear upon and interpret the systems of the intestinal tract and of the urino-genital organs—those of the vascular system, and the symptoms of the head and disposition. For in these we have retarded digestion; staggering after eating; vertigo; audible pulsation of the carotids, momentary loss of sight and hearing on sudden exertion; palpitation; paleness; retarded and scanty menstruation, with syncope and exhaustion; depressed, melancholic disposition. A hydramic dyscrasia, corroborated by the abundant serous or thin mucous discharges from secreting glands and surfaces. With this state are connected the temporary blindness and deafness which are perhaps sympathetic symptoms occurring in a chlorotic patient.

Tearing pain the hip in the afternoon, occurring in, or aggravated by, a warm room and repose; chilliness, cold feet, wakefulness in the evening, sleepiness in the morning.

Face pale; eyelids puffy; tongue whitened, covered with viscid mucus; pulsation at the pit of the stomach, perceptible to the pressure of the hand; stools loose, green, slimy or bloody; acrid, thin leucorrhœa; scanty menstrual discharge; rapid breathing after eating or lying down; coldness of the hands and feet.

Vertigo resembling intoxication; bad taste in the mouth in the morning; loss of appetite; absence of thirst; nausea; frequent eructations of wind tasting of the ingesta; beating and fluttering of the stomach; cutting pains in the side and abdomen; suppression of the menses with general coldness of the body and nausea; asthmatic oppression of the chest after eating, or when lying in the recumbent posture; pain and weakness in the small of the back; disagreeable

pulsation of the arteries of the whole body; tremulousness; weariness; restlessness during the night; palpitation of the heart after eating or talking; anxiety; disgust of everything; sullenness; whimsicalness; dissatisfaction.

REMARKS.—*Pulsatilla* is adapted to chlorotics who have been irregular in menstruation, and are of a mild, timid, yielding, or sad disposition. When there is a total suppression of the menses, with much pain in the small of the back, frequent turns of chilliness and absence of thirst, it will be indispensable, either by itself or in alternation with some other medicine.

Ignatia—Case by Dr. Eisenmann.—A woman, aged thirty, had been chlorotic for eight years, and had undergone much medical treatment. There was œdema of the lower limbs, and ascites, but not far advanced. She took ten drops of tincture of Ignatia, twice a day, under which the symptoms disappeared in two months. He found this remedy most effectual in cases in which the stomach was very delicate, and was much more successful with Ignatia than with preparations of iron. Dr. Gabalda, of *L'Art Medical*, approves of the employment of Ignatia, Nux-vomica, &c., in palpable doses.

ANÆMIA.—*Ferrum*.—M. le Dr. Troussseau says, 1859,* that thirty years ago, when he published his first works on this subject, “there was not a pound of iron sold in the course of a year in all Paris. He has since seen the practice of giving the preparations of Iron extended till the profession in general have progressed so far beyond him that he who taught them to use too much of it, has not now influence enough to bring them back to safe limits. He confesses that he long ago went too far with it, and now “openly reproaches” himself with the fatal termination of many of his cases. He says:

“I have seen young girls or women chlorotic, dieted with bitters and Iron, get a little better—then relapse as soon as the treatment had been discontinued. The same remedies were prescribed anew, a sensible improvement ensued, but relapse soon followed. Sometimes the Iron did harm. In cases where auscultation had previously revealed nothing normal, I saw the lungs attacked and the Iron very ill borne. Having quieted thoracic symptoms I have resumed the Chalybeate preparations, but they were smitten with impotence, while all the characters of chlorosis existed.

“One circumstance has painfully affected me. The daughter of a friend in her fourteenth year was overgrown. Menstruation supervening with excessive flow, chlorosis was manifested. I gave Iron; the color returned, and the catamenia reddened. Next month the same symptoms, same treatment, same success. All the while she took Iron she was lively, expansive, excited. Eight or ten days after

* *Gazette des Hôpitaux*, Dec. 22, 1859.

the last dose, December, 15, 1840, the thermometer having fallen to 15° (59° Fah.), she went to see Napoleon's funeral. On her return she coughed a little, then was seized with an alarming haemorrhage from the nose, the lungs and uterus all together. At the next menstrual epoch, the same thing occurred. Fever lighted up quietly, but soon became intense. All the symptoms got worse, and this young girl breathed her last sigh at the end of six or eight weeks. She died of a galloping consumption. I was afraid my Iron was not quite guiltless of this deplorable result. Now, I reproach myself openly with it. Then I was not quite convinced."

Another Case.—The wife of an architect, aged between twenty-five and thirty, had been chlorotic from her seventeenth year, and was suffering cruelly with temporo-facial neuralgia.

"Believing it to be connected with the chlorotic state I gave Carbonate of Iron in large doses, hoping to cure the neuralgia through the cure of the chlorosis. In a month strength and appetite had returned; the rose bloomed on her cheeks; a general excitement had replaced the prostration and languor; while of the neuralgia there only remained the remembrance. In discontinuing my visits, I recommended the protracted use of Iron, and its occasional resumption.

"Six weeks later I was recalled. Cough had supervened, with some oppression and febrile agitation every evening. Auscultation recognized, at the summit of one lung, a sub-crepital rale, with prolonged and exaggerated expiratory murmur. I was frightened, and with cause. I stopped the iron forthwith, and began a different medication; but it was too late. Five weeks after this young woman was carried to her grave with a galloping consumption."

These, and similar cases, opened the physician's eyes to the danger of going too far with Iron in chlorotic patients. He now believes "that with individuals predisposed to tuberculous phthisis, the protracted use of Iron only favored and hastened the evolution of the tubercles. This view has acquired with me the certainty of conviction."

The disasters encountered by Mr. Troussseau in the reckless use of Iron are simply the pathogenetic aggravations which a homœopathist knows how to avoid, at the same time that he employs this identical remedy to cure them when they come before him in symptoms resulting from disease. Our views on this subject have been given under phthisis pulmonalis. (See page 245, Vol. II.)

Sepia.—Swollen and puffy appearance of the whole body; face puffy, pale or yellow; eyes surrounded by blue or greenish margins; tongue coated with a white fur; fetid breath; menses too early and scanty; yellowish, watery, or mucous leucorrhœa; cold feet and hands when in bed in the evening. Painful beating in the head; roaring in the ears; no appetite; or morbid desire for all kinds of food; absence

of thirst; pain in the side and region of the liver; great sexual inclination; frequent dyspnoea; cough with mucous expectoration; stitches in the chest and side; weakness and stiffness in the small of the back; restless sleep, with frequent waking; skin tender and sensitive; sweat on waking; sensitiveness to cold air; faint and discouraged; symptoms worse at night and when at rest; palpitation of the heart and intermittent pulse; weakness of memory; inability to think or reason; giddiness from walking; melancholy, discouragement, and irritability.

REMARKS.—Chlorosis of nervous and delicate females, with a thin and delicate skin, and in whom menstruation has always been irregular, may be cured by *Sepia*. If the patient sweats profusely when walking, and is particularly sensitive to cold air, this remedy is still more necessary.

In inveterate cases, attended with extreme prostration, trembling of the limbs, coldness of the surface, entire suppression of the menses, dropsical swellings, great difficulty of breathing, palpitation of the heart, loose state of the bowels, frequent and protracted turns of faintness, we may examine *Ferrum*, *Arsen.*, and *Veratrum*. *Calcarea-carb.* and *Platina* are indicated when the menses are too frequent and abundant. These medicines are especially adapted to young female organisms.

ADMINISTRATION.—The remedies should generally be employed at the first, second, and third attenuations, and a dose administered once or twice daily, until there is apparent effect. No repetition should then be allowed so long as the slightest amendment is perceptible.

Helonin.—(*Helonias dioica*, False Unicorn Root.) Cases of constitutional debility, anaemia and dyspepsia, associated with irregularity of the uterine functions; women subject to abortion; suffering from prolapsus uteri, leucorrhœa, frequent heavy pressive pains in the uterine region; uterine atony causing amenorrhœa or dysmenorrhœa. It is regarded by Dr. Hale and others as a uterine tonic.

Dr. Wolf says:—Chlorosis in its present form and immense extension depends on the sycotic poison; in many cases it is congenital, or shows itself first after vaccination. It resists all other treatment, or is at best palliated by it. Tartar-emetic partially antidotes the sycotic poison, at least so far as depends on vaccination. *Thuja* is considered best capable of eradicating it.

METRITIS.—*Treatment*.—If swelling, heat, pain, tenderness and fever furnish sufficient evidence of inflammation of the substance of the uterus the disease is not so uncommon as it is generally represented by medical authors.

Remedies.—*Aconite*, *Belladonna*, *Nux-vomica*, *Mercury*, *Sepia*, and *Macrotin* are the most effectual remedies in cases where there are

yellow and purulent uterine discharges, whether there is superficial ulceration or not.

In nine cases out of ten of metritis, or peritonitis, the alternate and persistent use of the first dilution of Aconite and Belladonna, will effect cures. After a large experience we have arrived at this conclusion.

Macrotin exerts a most controlling influence over the uterine functions, but in many cases cannot be given lower than the 6^o or 9^o dilution, without aggravation, especially if the uterus is rendered sensitive by anything like active disease. I have seen it restore the menstrual function more frequently and more promptly than any other drug. Pregnancy has often followed its use, after it has been long prevented by functional uterine disorder, or by chronic inflammation.

Case.—A lady, aged twenty-six, strumous constitution, had for some months uncomfortable sensations in the pelvis, pain in the back; has for a week had leucorrhœa, now constant, large in quantity, unequivocally purulent, but little tenderness over the pubis; feverish in the afternoon and night; occasional night sweats; is languid and weak; the cervix swollen, soft and puffy; has been confined to bed for a week. Regarded as an inflammation of the mucous membrane of the uterus, secreting pus, with probable ulceration. Aug. 16. Give Mer. Sol. 3^o, one grain morning and evening. There was progressive improvement for twelve days. Sept. 3, Sepia 6^o, three times a day. In two weeks the discharge was but little; health greatly improved. Sept. 17th. Macrotin 3^o, one grain morning and evening. In a week the discharge ceased. Considered herself well. A partial return two weeks afterwards. Give Mac. 3^o, one grain three times a day. This seems to have made the cure permanent. (*Dr. J. S. Douglas.*)

9. CYRTOSIS TALIPES.—CLUB FOOT.—KYLLOPODIA.

CAUSES.—These deformities, whether congenital or acquired, have the generic name talipes, referring to the ankle or pastern of the beast.

Varieties: 1. Vara—foot turned inwards.

“ 2. Vulga “ “ outwards.

“ 3. The foot from extreme tension turned upon itself, and rests upon the ground by the superior surface.

It has long been believed that these deformities result from irregular conformation of the bones, or defect of equilibrium in the action of the muscles, or wrong action of the tendons. M. Duval, of Paris, more than twenty years ago proved to the French Academy that the primary cause of club-foot was—first, in the cerebro-spinal axis, and secondly, in spasmodic contraction of the muscles. The child in utero

is subject to violent and protracted motions; and seems in that state more subject to spasmotic and nervous affections than to any other forms of disease; unnatural posture may produce deformity. Mental emotion of the mother is considered an original primordial cause of deformities and marks. Hereditary descent is one well-established cause. Dr. Richardson, of Louisville, says: "A young man of the South, with double club-foot, assured me in 1839, that there was a family of six or seven children, male and female, all children of a club-footed father."

The effect of position and weight of the body in walking in after life, need not be considered here; we see its effect every day, especially up to the age of adolescence. In every position in which the foot may try to adapt itself to its duties, nature, true to herself, endeavors to adapt it to its position by forming a thick skin wherever the surface is applied to the ground; and if it be the *top* of the foot that is turned downward, that intended for the sole is turned upward, and has the delicate skin of the natural upper surface.

TALIPES CONGENITA.—CLUB FOOT.

TALIPES.—*Club-foot.*—*Treatment.*—Club-foot is generally a congenital disease, and the treatment by which it may in a good degree be remedied, should be commenced at the earliest period of the birth. When great deformity exists in later periods of life, efforts to correct it by surgical interference is not always successful. The bones have become more unyielding, adapted to the shape assumed by the deformity, and are more firmly bound by the ligamentous bands in that position; operations which divide the tendons leave the tension of ligaments to be overcome, with all the adaptations of the metatarsal bones and their peculiar articulations. If the limb be straightened by the operation, it is also weakened in muscular power.

The treatment should be commenced in the earliest stage of infancy in an effort to control the wayward muscles, and restore the regularity of the articulations at the earliest possible moment. While the tendons are flexible, and the bones and cartilages soft and yielding, apply some apparatus that will control the foot and bring each part in proper position. A small splint and foot piece may be adjusted with broad adhesive straps to the foot, and a small pad placed over the ankle joint beneath the splint, which should have a hole in the upper end to tie the ends of another adhesive strip through, the broad surface of which should pass around the calf of the leg and be tightened at pleasure. Now place a strip of adhesive plaster so that the ends shall adhere to opposite sides of the thigh from the groin, and let the open loop pass a little below the knee. Wind another strip behind the

ankle over the top of the foot and under the foot piece, so that when it is brought up and tied in the loop of the thigh strap, it will hold the foot in a proper position. By attending to the proper angles of the splint and foot board, and tightening the two strips spoken of as they may require, the deformity of the bones can be prevented to a great degree. These dressings should be renewed once or twice a week, or as often as the straps fail to adhere, and care should be taken to have the strips as wide as possible, and not to bring any part so tight as to interfere with the circulation.

OPERATION.—But one cutaneous incision is to be made with a narrow and delicate bistoury. Avoid detaching and separating the cellular substance surrounding the tendon, and preserve as far as possible the cellular sheath, which is to perform an important part in the work of reparation; give the least possible pain, open few vessels, thereby avoiding ecchymosis and serious inflammation. Commence flexion of the foot by the application of the *appareil* immediately after cutting the tendon; but avoid exciting pain in the seat of the operation.

The position of the patient is on the breast, the feet and legs are over the sides of the bed; an assistant holds the tendon slightly tense. With a common bistoury a short incision is made through the integuments upon the side of the tendon in a longitudinal direction, opposite its greatest prominence. Through the incision just made a narrow, convex probe-pointed bistoury is introduced, with which a passage is easily made by separating the cellular substance without endangering the puncture of the skin on the opposite side. The section of the tendon is made, by Stromeier, by introducing a convex knife in front of the tendon (thereby avoiding injury to the posterior tibial vessels and nerves), allowing the point barely to issue on the opposite side of the skin. The limb is now extended to its proper position, and an *appareil* for support is applied to sustain it there, trusting to the reparative power of nature to fill up the space between the separated ends of the tendon. In the same manner we cut the contracted tendon in strabismus, the medical treatment of which is given p. 558, Vol. II. On the second or third day after the tendon is divided the cellular theca or sheath is thickened on each side, more consistent than natural and it is open only on the side where the instrument entered, and embraces both extremities of the tendon. The internal surface is ecchymosed, bright red, in contact with itself, or with the tendon's extremities. By the ninth day the connection is already adherent to the end of a gray colored substance without the appearance of fibres. Between the ends of the tendon is a contracted canal without an opening; its walls are in contact, and generally empty, sometimes partially filled with coagulated blood.

CLASS VI.—DISEASES OF THE EXCERNENT FUNCTION.

ORDER I.—AFFECTING INTERNAL SURFACES.

ABSORPTION IN CAUSING AND CURING OF DISEASE.

The function of absorption is one of the most important of the human system in a state of health; its influence, therefore, in the cause and cure of disease becomes equally important. As the absorbing and circulating systems are distinct from each other, their offices present a striking contrast and seem to be entirely opposite to each other. Thus, the blood-vessels possess a susceptibility to excitement by other agents besides the blood which flows within them, and we see the arteries excited to various degrees of action, from the excessive action which ends in gangrene to the lowest grade of direct debility. We see all organs except the absorbent system under the control of the circulation, and we measure the violence of disease by the strength and frequency of the pulsations of the radial artery. But the absorbents, being unconnected with the circulation except by their attachments at their terminations, have a distinct source of independent action of their own. No external stimulant provokes them to high action, and no narcotic exerts on them any perceptible sedative influence. The heart communicates its impulse, and impels with quicker or slower motion; but the absorbents never feel its influence; and they continue their uniform action after the heart has ceased to beat. (See *De Puy on Uniform Action of the Absorbents, N. Y. Med. Phys. Jour.*, June, 1828, p. 220, &c.)

The absorbents open on every external and internal surface of the body, and absorb and convey into the general circulation substances which may be presented to them without the body, as well as all the waste materials which are being thrown off from the various organs, and the products of disease formed in the textures of these organs, or the various secreting surfaces.

1. *Absorption on the Skin.*—Contagious and chronic affections of the skin may be communicated to others by absorption, either through the entire skin, or more conspicuously, when the cuticle is removed. Through the same channels remedies have been often introduced by means of baths, lotions, fumigations and inunctions. The Sulphate of

Quinine and preparations of Morphia, Croton Oil, Elaterium, preparations of Iodine, Strychnia, Prussic-acid, Tartar-emetic, &c., have been often introduced into the system through the skin.

2. *Absorption from the Lungs.*—Many of the causes of disease are received through the respiration into the lungs. In this way marsh miasm and noxious animal exhalations are received, and exert their deleterious influence on the nerves of the lungs and on the blood itself into which they are introduced by absorption. It is also generally believed that foreign substances dissolved in, or combined with, the moisture of atmospheric air, may, when inspired, be carried from the surface of the lungs directly into the blood through the capillary veins. The specific poisons which produce malarial and infectious diseases are almost always received into the system through the lungs; and their influence is exerted, *directly*, on the nerves which supply the respiratory organs, and *indirectly*, by the partial absorption of the causes themselves from the mucous surface of the lungs into the general circulation. Observation and experiment have shown that foreign bodies are absorbed into the system with great facility when the vital resistance is feeble; and that, in proportion as the vital functions are proceeding with energy, the depressing causes of disease are repelled or counteracted. It is also known that the deleterious properties of vitiated air can be lessened by the dilution effected by free ventilation, or neutralized by disinfectant agents.

The prophylactic and practical importance of these facts is seen in the therapeutical measures based upon them. Various remedies are introduced through the lungs, and are found advantageous in many diseases. (See Vol. I., p. 795 and 767.)

3. *Absorption from the Alimentary Canal.*—It is chiefly through the absorbents of the prima via that nutritious as well as medicinal substances are introduced into the blood-vessels. Of the many agents which cause, counteract, or remove disease, some produce their effects by modifying the states of the nerves and mucous tissue of the alimentary canal; others are absorbed by the lacteals or by the venous radicles and carried into the general circulation. The greater number of remedial agents produce their first impression on the nerves, beginning with those of the tongue, then those of the stomach and intestines; but they are ultimately absorbed, diffused through the general mass of the blood, and exert their final influence on this fluid and the various secretions. The structure and peculiar mode of action of the absorbents are such that they take up with little discrimination whatever comes within their reach; unwholesome and imperfectly digested chyle, vitiated secretions in the intestines, or long-retained fecal matters are absorbed, and produce their peculiar effects upon health; obstructed secretions of the kidneys or liver are thrown into the blood.

vessels, become sensible in other secretions, in the skin, or in the perspiration, and prolong or aggravate existing diseases.

The absorption of medicinal substances from the intestinal canal has been amply proved by experiments. Acid urine becomes alkalescent under the free use of alkalis, and the different salts of Potash and Soda pass unchanged through the blood and are excreted by the kidneys. Prussiate of Potash passes into the bladder within ten minutes after being swallowed. (*Paris.*) Acrid medicines are taken up by the lacteals as rapidly as the blandest nutriment; the vitiated secretions in typhus are absorbed with the products of the food; and in every state of health or disease these vessels seem to act with nearly equal energy. The process by which absorption takes place is now regarded as a manifestation of capillary attraction called *endesmose*.

Endesmose and *Exosmose*, which are two peculiar results of capillary attraction, are thus defined: *Endesmose* is the inward motion of a fluid through a membranous or porous substance, into a vessel containing a different fluid. *Exosmose* is the outward motion of the contained fluid through the same substance. If a vessel be filled with Alcohol, and a piece of wet bladder tied over the top, the whole may be immersed in water, with the following result: in a few hours it will be found that water has passed by endesmose into the vessel through the bladder, and that Alcohol has passed out into the water by the movement called exosmose. The inward current is stronger than the outward one; hence the water passes in faster than Alcohol escapes, consequently the bladder soon becomes puffed out.

The human skin being porous, a liquid with which it remains in contact will find its way through by endesmose, and be absorbed into the body. Thus, if a drop of Prussic-acid be placed on the arm, a sufficient quantity will be absorbed into the system to cause death.

4. *Absorption from Diseased Organs and Structures.*—In every abscess, in morbid states of the uterus, in scirro-cancer, fungous haematoles, the poisonous products of disease are absorbed into the circulation; the blood and other fluids are contaminated, and life ultimately destroyed, if the formation and absorption of the deleterious products continue. Their presence in the blood is recognized by the change they effect in the color of the skin, in the increased action of the heart, the failure of vital power, the morbid condition of the nervous system, deranged digestion, and the evident degeneration of the blood and all the fluids of the body. In some chronic diseases the morbid secretions produce irritation in the lymphatic glands through which they are conveyed; but when the quantity produced in the seat of disease is large the obstructions furnished by the glands is an insufficient barrier; the glands themselves become inflamed, suppurate, and add, by their contents, to the general source of irritation; the

absorbents continue to take up the purulent matter and carry it into the blood-vessels, and the entire train of morbid processes can only be arrested by restoring the general health.

Process by which Secretion is Performed.—The first complete demonstration of the action of the nerves of secretion was that given by Ludwig, in his work on *The Salivary Secretion*, in 1851. After having tied the carotid and vertebral arteries of the two sides, removed the brain, exposed and opened the duct of Steno, and divided the trigeminus within the interior of the cranium, he observed the following results :

1. The irritation of the peripheral extremity of the trigeminus produced isolated movements of the jaw, and at the expiration of ten or twelve seconds, an abundant secretion of saliva, which continued after the cessations of the excitations.
2. Irritation of the peripheral extremity of the facial provoked distinct movements of the hairy scalp and the face, also considerable salivary secretion, the jaw remaining completely immovable. Irritation of a branch of the same nerve produced the same secretion, but no muscular movement.
3. Irritation of the central extremity of the glosso-pharyngeal caused parotid secretion, which is never produced by excitations of the same parts of the vagus and hypoglossus.
4. No nervous branch separated from the brain and excited, except the inferior maxillary division of the fifth, and the chorda-tympani, a branch of the facial, is capable of acting upon the parotid secretion. Excitation of the central extremity of the glosso-pharyngeal alone determines salivary secretion.
5. The will, by the intervention of the trigeminus, possesses the power of acting directly upon the secretion, by the simultaneous influence exercised by this nerve upon the movements of mastication and the flow of the saliva. It does not appear to exercise the same effect, upon the facial, for the movements of the muscles which are animated by this nerve are not observed to be accompanied by salivary secretion.

All the observations of Ludwig are comprised by him in the following propositions :

1. Without the intervening operations of the trigeminus and the facial upon the parotid, and the gustatory division of the trigeminus upon the submaxillary glands, salivary secretion cannot occur.
2. Irritation of these nerves does not produce contraction of the glandular vesicles, nor of the excretory ducts. The ducts being closed, the glands fill and enlarge during their excitation ; when, on the contrary, they are open, there is a slow but continuous flow of the saliva for some hours.

3. The pressure developed by this secretion is more considerable than that of the blood itself in the glands ; and, finally,

4. The nervous irritation does not determine any modification of the circulation that may be considered as a special source of mechanical force. As regards the influence of the nerves upon the movements of the lymph and the secretion of the lymphatic glands, Ludwig and Krause being satisfied that the quantity of lymph which escaped from the thoracic duct of a dog was the same whether the two carotids were tied or not, and not less after a fast of twenty-four hours, than immediately or some hours after a copious meal, observed a prompt acceleration of the discharge upon galvanizing the lingual branch of the trigeminus, either at its peripheral extremity or in its course along the lower jaw. The increase continued as long as the irritation of the nerve lasted, and the discharge was three or four times the normal amount. We have observed a considerable augmentation of the lachrymal secretion upon irritation of the gasserian ganglion. Eckard, on searching for the nerves which supply the mammary gland, recognized as such the glandular branches of the lateral thoracic nerve, which runs along the axillary border of the pectoralis major muscle, between the fourth and sixth intercostal space, and besides, one or two extremely delicate filaments, variable in their origin, which accompany the large vessels. Having divided all these nerves in a goat, he observed no modification in the lacteal secretion ; but he lacked the more important experiment of irritating these nerves. The section of the glandular nervous trunks does not destroy the excitability of the peripheral nervous extremities for all causes of irritation, as long at least as these extremities are not atrophied.

It is believed, then, "that there are small ganglia in the midst of glandular substance designed to establish relations between the nerves of sensibility and those of secretion." As a proof of the influence of the nerves upon the secretion of the gastric juice, it has long been claimed that the gastric juice is never secreted except in consequence of some irritation. This idea has been confirmed by the experiments of Bernard, Blondlet, and Panum. Bernard, from his experiments, concludes that the pneumogastric serves only to transmit an irritation to the medulla, after receiving itself from the lung ; that it is the medulla that really presides over saccharine secretion ; and that the great sympathetic is the agent by which the medulla acts upon the liver.

Dr. Samuel says, among medicines, we have a great many having a specific action in augmenting and diminishing certain secretions. The well-known action of *Mercury* and *Delphinine* in salivation may be regarded as among the most generally acknowledged and best demonstrated facts in the whole of anthropology. May not the resolvent action

of Mercury (and also of Iodine) upon ganglionic lymphatic tumors be attributed by analogy, with what has been observed by Ludwig and Krause, to an irritation of the nerves which preside over the elaboration of the lymph, and to the movement of this fluid in the interior of the canals, &c.

1. HYDROPS.—DROPSY.

GENERAL DESCRIPTION.—Dropsy is generally but a mere symptom of some other affection. Its proximate cause consists in an inflammation, congestion, or exalted action of the capillary extremities of the arterial vessels of the serous and cellular membranes, and a torpor or inactivity of the venous absorbents of the same parts.

The remote and general causes of dropsy are excessive loss of blood and other animal fluids; general debility, resulting from disease, mechanical injuries, obstructions of the liver, spleen, kidneys, veins, lungs; abuse of drugs and stimulating drinks. At first view an inflammation or congestion of the serous exhalents would seem to be incompatible with general debility, arising from excessive loss of blood, and diseases of the liver, kidneys, lungs, spleen, &c., but the fact is now well established that these circumstances actually favor the formation of these very capillary inflammations and congestions.

Some writers maintain that serous effusions do not occur until the active inflammatory symptoms are passing off, and a state of sub-acute inflammation obtains; while others, like Laeunee and Johnson, lay it down as a fundamental law of serous membranes, "that they begin to effuse the moment they become inflamed." It is true that acute inflammations of serous membranes often occur and subside without leaving any traces of effusion, but this is owing to the fact that, during the general febrile excitement, the venous absorbents of the affected cavities, being equally irritated with the exhalents, exercise their functions with preternatural activity, thus conveying off the fluid as fast as exhaled, and securing the equilibrium between exhalation and absorption. After the inflammatory symptoms have subsided, if the exhalents and absorbents both recover their tone, health returns; but, as frequently happens, if the latter remain feeble, while the former return to their normal state, the healthy balance is lost, and dropsy is the result. In health, "the cellular tissue, and all of those cavities lined by serous membranes, are continually lubricated by a fluid which exhales from capillary extremities of the arterial vessels." (*Frank.*) This fluid serves to render the parts soft, pliable, and mobile, and to prevent the adhesive inflammation which would otherwise occur from friction during the movements of the body. These exhalents give out nearly a given quantity of vapor, and a due equilibrium is established

between the amount secreted for the use of the organism and that which is afterwards taken up by the venous extremities, and thrown off by the skin, kidneys, salivary glands, and intestines. So long as this proportion is maintained, all goes on well; but whenever any of the serous membranes, like the peritonæum, the pleura, the pericardium, or the arachnoid, secrete more fluid than is required for the wants of the economy, or than can be absorbed by the venous extremities, then drafts are made upon other and healthy parts to supply the increased demand. On this account the perspiration becomes suppressed and the skin dry and husky, the saliva scanty and viscid, the urinary secretion small, high-colored, foetid, and sedimentitious, the stools scanty and difficult, and the functions generally deranged.

In cases of dropsy, arising from excessive loss of blood or starvation, the normal physical condition of this fluid is changed,—the impression it produces upon the structures is altered, and a superabundance of serum is poured out into the cavities and the cellular tissue. This increased exhalation may be due either to the greater affinity which the serous membranes exert upon the altered blood, or to an irritation of the capillary extremities which induces an exaltation of their exhaling function. The experiments of Matteucci teach us that different fluids pass through the animal membranes in definite quantities, and with certain degrees of rapidity, according to the character of fluids used, and the condition of the tissue operated upon. These different phenomena are termed *endosmose* and *exosmose*; and it is by no means improbable that some varieties of dropsy may be partially dependent upon this peculiar action.

Another very important circumstance connected with the formation of dropsies is alluded to by Eberle. "I have," says he, "already observed that immediately after a profuse loss of blood, absorption goes on with unusual activity. The blood-vessels are rapidly replenished with crude fluids: for the absorbents being extremely active, nearly all the aqueous fluids received into the stomach are speedily absorbed into the circulation; and, this is especially favored by the very great thirst which almost always occurs after excessive sanguineous losses. The blood being thus inordinately supplied with a crude and watery fluid, becomes more irritating to the heart and capillaries, and diluted to such a degree as to pass off more rapidly by the exhalents." (*Practice of Medicine*.)

Direct experiments on animals have proved that artificial dropsies may be produced by abstracting blood and drenching them with water. On the other hand, Magendie and Matteucci have equally demonstrated that a *fullness* of the blood-vessels very materially *retards*, and in some instances entirely suppresses, the function of absorption.

We think, then, it may be safely concluded that in every case of dropsy there are two simultaneous morbid conditions present, namely, increased exhalation and decreased absorption; and that, although irritation and congestion of the exhalents are generally indispensable conditions to this morbid action, yet that effusion may result in certain cases simply from an alteration in the character and quantity of the blood by endosmose.

Dropsies are acute or chronic, primitive or secondary, simple or complicated; and the character of the effusion is dependent upon the age, sex, and constitution of the patient, and the nature of each particular case. Generally, however, the fluid is composed of albuminous matter dissolved in more or less water, with different phosphates and carbonates and a little sulphur, (Frank,) of an oily character—of a citron, orange, or straw color; and of consistency semi-gelatinous, or like the white of eggs. But these appearances are sometimes subject to variations, as cases are reported in which the liquid was brown, white, green, purulent, bloody, saccharine, urinous, in some instances containing substances like hydatids and bits of membrane.

Much light is sometimes thrown upon the nature and causes of dropsy by an examination of the urine. In certain cases of anasarca, for example, it is found that the urine coagulates on the application of heat, and from this circumstance we may suspect the existence of the disease so ably described by Dr. Bright under the name of *granulated kidney*. The application of heat in these cases, first causes the urine to become milky, and afterwards to present a curdled or flaky appearance. "In hydrothorax following scarlatina, the urine is mixed with crourine; in hydrothorax depending upon degeneration of the spleen and liver, the urine contains a large quantity of urea and uric-acid, rosic-acid and purpurate." (Hartmann.) In acute dropsies the effusion does not occur until the active inflammatory symptoms are passing off and a condition of sub-acute inflammation supervenes. In these cases, also, the exhalation takes place with more rapidity, and is attended with more painful symptoms, than in the chronic varieties. Now and then slight accumulations take place which remain stationary for years, when they entirely disappear, or the morbid condition of the exhalents returns, and the disease advances to its full development. Instances of this description are often observed in hydrocele, and in ovarian dropsy.

An excellent diagnostic arrangement of the dropsies has been made by Marshall Hall, founded upon their causes, viz :

"1. INFLAMMATORY DROPSY.

"First. *The History.*—This form of dropsy generally takes place rather suddenly, and is to be traced to exposure to wet and cold."

"Second. *The symptoms* consist in the appearance of diffuse, tense anasarca, generally with dyspnoea, and frequently with the signs of effusion into the head, thorax, or abdomen, and with a coagulable, and occasionally a sanguineous condition of the urine."

"Third. *The morbid anatomy* varies according as the dropsy is confined to the cellular membrane, or extended to the serous membranes; in the latter case there is frequently the effusion of coagulable lymph, as well as of serum, from the serous surfaces. The kidneys, in protracted cases, become disorganized, granular, scabrous, &c."

"2. EXANTHEMATOUS DROPSY.

"First. *The History*.—This form of dropsy succeeds to some exanthematous diseases, but by far most frequently to *scarlatina*."

"Second. *The symptoms* are similar to those just detailed as designating *inflammatory dropsy*; there is the same disposition to effusions into the brain, thorax, and abdomen."

"3. DROPSY FROM EXHAUSTION.

"First. *The History and Symptoms*.—This form of dropsy is known by being traced to the loss of blood. It occurs in the form of anasarca, and of effusion into the cavities. I do not know whether the urine be coagulable."

"Second. A similar form of dropsy is induced in cases of neglected *chlorosis*."

"4. DROPSY FROM DEBILITY.

"First. *The history and symptoms* sufficiently establish and distinguish this form of dropsy. The patient has frequently had returns of dropsical affections, and has a pale and cachectic appearance. The urine coagulates into brownish flakes by exposure to heat."

"5. DROPSY FROM OBSTRUCTION IN THE FLOW OF VENOUS BLOOD.

"This form of dropsy arises from—

"First. *Diseases of the heart, especially of the valves.*

"Second. *Disease of the lungs.*

"Third. *Disease of the liver, especially of the 'cirrhose.'*

"Fourth. *Pressure on, or disease of the veins themselves.*

"*The History and Symptoms*.—This kind of dropsy is distinguished by ascertaining the seat and nature of the original disease. Like the rest, it assumes the form of anasarca, and of effusion into the serous cavities, and into the cellular membrane of the internal organs, as the lungs, intestines, &c. *The urine is not coagulable.*"

"6. DROPSY FROM DISEASE OF THE KIDNEYS.

"For the detection of this species of dropsy the profession and mankind are indebted to Dr. Bright.

"First. *The Symptoms.* It is distinguished by the coagulable condition of the urine. The urine is apt sometimes to be sanguineous.

"Second. *The Complications.*—There is, in this kind of dropsy, occasionally,

"First. *An attack of apoplexy;* and frequently,

"Second. *Inflammation of the serous membranes, and especially of the pleura.*

"The liver is usually found free from disease.

"*The Morbid Anatomy.*—Dr. Bright describes three kinds of this disease of the kidney. In the *first*, the kidney loses its usual firmness, and becomes of a yellow-mottled appearance externally. The size of the kidney is not materially altered. In the *second*, the whole cortical part is converted into a granulated texture, and there appears to be a copious morbid interstitial deposit of an opaque white substance. The kidney is generally rather larger than natural. In the *third*, the kidney is rough and scabrous externally, and rises in numerous projections not much exceeding a large pin's head, yellow, red, and purplish; it is hard and inclined to be lobulated, and its texture approaches to a semi-cartilaginous firmness; there appears, in short, a contraction of every part of the organ, with less interstitial deposit than in the last variety." See pp. 46, 21. Vol. II.

General Diagnosis.—The symptoms most commonly observed in dropsy, are: sensation of weight, oppression, fullness, and uneasiness in the part affected, with more or less disturbance of the neighboring tissues; dyspnoea and sense of suffocation after attaining the horizontal posture, and after active exercise; general feeling of debility, and disinclination to bodily or mental exertion; partial, and in some instances, almost total suppression of the urinary, salivary, and respiratory secretions; impaired appetite; feeble digestion; rare and scanty alvine discharges; thirst; countenance pale, sallow, or cachectic; emaciation; "diminution of animal heat, sensation, and motion." (*Frank;*) general derangement of nearly all the functions.

In cellular dropsy the affected part is swollen, the skin presents a smooth and shining appearance, with blue veins traversing it in different directions, and pressure with the fingers causes a deep indentation or pit, which remains for a considerable time. There is also an apparent diminution of temperature of the part, and a sensation of weight and tension is experienced, rather than of acute pain. The accumula-

tion of serum becomes so great in some instances as to burst through the integuments, and thus partially discharge itself.

In acute dropsies of the serous membranes the symptoms are more active. There we have general febrile disturbance; acute tenderness and pain in the disordered part, especially on pressure, or contact of light clothing; urgent thirst; hot and dry skin; urine very scanty and high-colored; saliva viscid, tenacious, and small in quantity; loss of appetite; furred tongue; rapid sinking of the physical energies. These acute symptoms often subside, and leave the inflamed membrane in a state of sub-acute inflammation, thus developing well-pronounced chronic dropsy.

It will be observed in our previous description of symptoms that we have included a diminution of the urinary, salivary, and intestinal secretions as characteristic of this malady; but these signs are not invariably present, for in a few instances we have witnessed an abundant and natural urinary and salivary secretion during the continuance of the complaint. So, also, one or more of the other symptoms described may be wanting, and yet the dropsical affection proceed to a fatal termination; but these circumstances are rather to be looked upon as slight exceptions than as general occurrences.

PROGNOSIS.—Our prognosis must depend much upon the cause and nature of each particular case. Simple cellular or serous dropsies uncomplicated with disorganization of any of the important organs, are for the most part curable. In this class we may rank exanthematic dropsies, and those which have followed losses of blood, from acute diseases in which no serious organic derangement has occurred, and from abuse of mercury and other drugs. In these cases a speedy removal of the causes which have conducted to the disease, with pure air, a generous diet, and a judicious course of homœopathic medicines, will generally enable us to remove permanently the morbid accumulation.

On the contrary, if the effusion has arisen from an organic affection of a vital organ, like the heart, the liver, the lungs, the kidney, or from incurable obstructions in the veins, our prognosis must be unfavorable. In these cases of complicated dropsy, our remedial efforts must be adapted to the remote general disease, as well as to the immediate symptoms of the malady. Although the chances of cure are small in cases of this description, yet, as recoveries do occasionally take place in individuals of naturally vigorous constitutions and those who are tenacious life, we should never prostrate our patients by discouragement, and a grim visage, but constantly point them to a beacon of hope in the distance. By this means we secure a powerful auxiliary to co-operate with us in our efforts to bring about those changes in the organism which may lead to a cure.

We come now to treat of the different species of dropsy, viz.:

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|--------------------------------|--------------------------------|
| First, <i>Anasarca</i> , | Second, <i>Ascites</i> , |
| Third, <i>Hydrothorax</i> , | Fourth, <i>Hydrocephalus</i> , |
| Fifth, <i>Ovarian Dropsy</i> . | Sixth, <i>Hydrocele</i> . |

1. ANASARCA.—CELLULAR DROPSY.

DIAGNOSIS.—The term anasarca is used to designate that variety of dropsical effusion which takes place from the exhalents of the sub-cutaneous cellular tissue. The malady first manifests itself in the inferior extremities, particularly after standing or walking for some time, and it gradually extends upwards until the whole sub-cutaneous cellular tissue of the organism becomes involved. The tumefaction is usually soft, doughy, and inelastic, pitting on pressure, and the skin is white, shining, and below the medium temperature. The swelling disappears in great measure, after the patient has been for some time in the recumbent position, but returns again when he has assumed the erect posture. Cellular dropsy may exist for years without causing serious inconvenience, when confined to the inferior extremities; but it is rare that the whole cellular surface becomes involved, unless some vital disorganization exists, or the energies of the system have become dangerously impaired.

The cases of anasarca attended with the least danger, are those arising from scarlatina, pregnancy, loss of blood, debility consequent upon convalescence from acute diseases, abuse of arsenic and mercury, enlarged inguinal glands, the pressure of tumors, or any other curable cause which operates to prevent the free return of the venous blood.

Effusions of this kind may very properly be termed *passive* dropsies, for we agree with Dewees, "that there are both active and passive dropsies, or rather dropsies that depend upon an increase of action, or of inflammation, and others where there may be a mere loss of balance between the exhalation and absorption."

In cases of dropsy arising from venous obstruction, for example, the venous absorbents below the seat of the obstruction are preternaturally distended with blood, and, as a consequence, their powers of absorption proportionably diminished, while the arterial exhalents exercise their function with the usual activity. In this manner the equilibrium between exhalation and absorption is destroyed, and dropsical accumulations obtain. So in phthisis pulmonalis, and affections of the heart, the blood being but imperfectly decarbonized in its passage through these diseased organs, becomes congested in the venous absorbents, and thus gives rise to diminished absorption, and consequent serous accumulations.

Anasarca is not usually attended with much constitutional disturb-

ance, or with symptoms that are painful. There are present, however, coldness of the surface and diminished secretion of urine and sweat. The countenance is also pale and sallow, and the general appearance indicates ill-health. Not unfrequently the effusion continues to increase until the affected parts become enormously distended, and finally crack and give issue to the accumulated serum. When this happens in erysipelatous or syphilitic subjects, sloughing and gangrenous ulcers sometimes supervene, which prove highly troublesome and dangerous.

CAUSES.—The peculiar condition consequent upon scarlatina, measles, phthisis pulmonalis, chlorosis, and diseases of the heart; venous obstructions caused by the gravid uterus, by the pressure of tumors, enlarged glands, ligatures, and mechanical injuries, sudden and excessive loss of blood, abuse of stimulants, arsenic and mercury.

2. ASCITES.—ABDOMINAL DROPSY.

DIAGNOSIS.—Dropsy of the abdomen may arise suddenly in consequence of acute peritoneal inflammation, and be attended with the ordinary symptoms of other febrile diseases, or it may make its appearance in a gradual and imperceptible manner, unattended by any notable constitutional disturbance. During the attacks of peritonitis, there is an increased exhalation from the inflamed serous vessels, from the very commencement of the disease, and so long as the whole organism labors under the exalted action incident upon the fever, the venous absorbents dispose of this superabundance of serum; but after the active symptoms have subsided, a corresponding depression obtains in all parts of the economy, except, perhaps, the affected membrane, in which there still may remain a subacute inflammation and its consequence, a preternatural effusion of serum. In vigorous constitutions the absorbents continue to remove the exhalation as fast as formed; but in feeble, delicate, or scrofulous subjects, the function of absorption often languishes, the equilibrium between the exhaling and absorbing functions is destroyed, and an ascites is the result.

The signs which characterize abdominal dropsy, are: gradual enlargement of the abdomen, first observed in the epigastric region, and afterwards extending over the whole abdomen; tenderness on pressure; difficulty of breathing on taking exercise, and some time after lying down; distinct fluctuation on percussion; sallow and unhealthy complexion; dry skin; scanty secretion of high-colored and sedimentitious urine; foul tongue, with a small secretion of viscid saliva; impaired appetite; constipation or diarrhoea, sensation of weight and stiffness, particularly when attempting to move about or bend the body; a general feeling of languor and debility.

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The only diseases which are liable to be confounded with ascites are pregnancy and tympanitis; but the history and circumstances of each case will enable us to distinguish with sufficient facility and certainty between the different maladies. In ascites the situation of the swelling, the fluctuation on percussion, the suppression of urine, dry skin, and the previous history of the case, will mark the nature of the complaint; and in pregnancy the gradual swelling at the lower part of the abdomen, the suppression of the menses, nausea and vomiting; the absence of fluctuation on percussion, and the motion of the child, will render our diagnosis accurate. Nor will the acute physician ever mistake tympanitic distention for ascites, for percussion, auscultation, and an absence of the characteristic symptoms of dropsy, will enable him to decide at once in regard to the real nature of the case. Indeed, we can hardly conceive how certain eminent surgeons should have been led to perform the operation of "*dry tapping*," when the distinguishing marks between tympanitic and aqueous distention are so easily recognized.

Authors have described several distinct varieties of abdominal dropsy, and have named each according to its precise location; thus, *subcutaneous ascites*, in which the effusion takes place in a circumscribed cavity or sac in front of the abdominal muscles; *vaginal ascites*, arising from a puncture or other injury to the aponeuroses of the muscles, and causing effusion into the sheath of the muscle; *peritoneal ascites*, or effusion within the serous cavity, and in some rare instances, on the outside of the membrane; *hydatid ascites*, in which the water is closed in one or more thin vesicles; also dropsy of the *epiploon*, of the *mesentery*, of the intestines, of the liver, of the *spleen*, of the *gall bladder*, and encysted *ascites*. This minute classification is, however, quite unnecessary for practical purposes, since ascites is so often complicated, not only with several of these varieties, but with hydrothorax, anasarca, and general dropsy. It is so very rare that we find the above-named organs affected separately, that we question the propriety of recognizing in them distinct species of dropsy, although it is of some importance to be aware of the fact that these distinct effusions may occur.

CAUSES.—The most common causes of ascites are peritoneal inflammation, affections of the liver, and abuse of stimulating drinks. It may also proceed from venous obstruction, general debility in consequence of disease, loss of blood, and abuse of drugs.

PROGNOSIS.—Our opinion respecting the probable termination of ascites, will be determined by the following circumstances: old age, and a constitution impaired by previous disease or by excesses, must always render our prognosis unfavorable. Dropsies complicated with incurable functional derangement of the liver or other vital organs, and

venous obstructions, are for the most part beyond the reach of medicine. On the other hand, ascites consequent upon acute inflammation of the peritoneum, loss of blood, abuse of stimulants and drugs, and the debility arising from fevers and other acute diseases, may generally be set down as curable. When the malady occurs in young and naturally robust constitutions, our prognosis will be still more favorable, and in some instances may afford grounds of encouragement in highly complicated cases.

3. HYDROTHORAX, OR DROPSY OF THE CHEST.

Hydrothorax is either idiopathic or symptomatic of some other disease. By far the most common source of the affection, and one which constitutes a serious complication, is organic disease of the heart. Another frequent cause of dropsy of the chest is protracted pleuritic inflammation. Dropsy of the heart generally co-exists with hydrothorax, and it is for this reason that we often find the pulse very irregular. The symptoms are most urgent during the night, after the patient has remained some time in the recumbent posture. The breathing becomes rapid, laborious, and grunting, with frequent sighing, sudden starting during sleep, anxious and distressed expression of countenance, face pallid and wax-like; small secretion of high-colored urine; puffiness of the face and extremities; fullness of the chest; dull sound on percussion; dyspnoea occurring from the slightest exercise, or from lying down; sudden starting up with fright during sleep; and irregular pulsations of the heart, will enable us to recognize the affection without difficulty.

Laennec assures us that hydrothorax accompanies many acute and chronic diseases, and that "its presence announces the approach of death, which it often precedes only a few moments." That these effusions do sometimes occur but a short period before death from organic affections of the heart, and possibly other organs, we entertain no doubt, for several cases have come under our observation strongly corroborative of the fact.

A dropsy of the heart is so constant an attendant on hydrothorax, and the symptoms of each so constantly simulate each other, that it is unnecessary to enter into a separate description of this malady. When the effusion originates from an affection of the heart, or the pericardium, there will always be a predominance of those symptoms which characterize cardiac disease, and afford us a sure guide in forming our diagnosis.

Paracentesis Thoracis may, in some instances, be resorted to with unequivocal advantage, for the relief of purulent collections within the thorax, but very rarely in hydrothorax. We have in two instances

saved life by a prompt resort to this operation, where matter had accumulated in the chest and the patients were at the point of death from suffocation; but in thoracic dropsies, very slight encouragement can be offered from its performance, although in extreme cases it is not to be lost sight of, since recoveries have now and then taken place after the operation.

4. OVARIAN DROPSY.

In this species of dropsy, the effusion takes place from the internal face of the membrane which encloses the ovary. The swelling is first observed in the iliac region, in the form of a small elastic tumor, and unattended with pain, uneasiness, or constitutional disturbance. The enlargement generally progresses very slowly, extending upwards towards the kidney of the affected side, then crossing the abdomen to the opposite side, until it comes to occupy the whole abdomen. No serious inconvenience is experienced until the tumor has attained such a size as to encroach upon the bladder, stomach, diaphragm, intestines, and the larger blood-vessels, thus giving rise to difficulty in urinating, sense of weight and uneasiness in the stomach, dyspnoea, colicky pains in the bowels, pains in the side and chest, diminution of the secretions, and oedema of the feet and ankles.

The tumor often remains stationary, and almost unnoticed for twenty or thirty years, when some sudden exciting cause will operate, and the swelling rapidly attain an enormous size.

The contents of ovarian tumors vary much in their character, being sometimes serous, sometimes albuminous, purulent, sebaceous, or fatty, or composed in part of organized structures. Dr. Clapp, surgeon to Exeter Hospital has reported a case in which the contents of the tumor "consisted of teeth, hair, bony deposit, some transparent masses of a cellular structure, (as examined by the microscope,) serum, sebaceous matter, and granular fat, which were contained in numerous small cysts. Teeth were found in all parts of the tumor, and were counted to the number of forty-three; some were contained in cysts, others were imbedded in the semi-transparent masses, and two or three were growing from the walls of the parent cyst. In one part, a few were imbedded in a mass of bone, bearing a strong resemblance to an upper jaw united in the mesial line."

Fluctuation can rarely be perceived in the swelling until it has attained a considerable size, but the location of the tumor, and the absence of pain or other unpleasant symptoms, will enable us to form a correct opinion in the early stage of the disease.

For an account of Hydrocephalus or Dropsy of the Brain, we refer to page 719, 724, Vol. II., of this work.

TREATMENT OF DROPSY.—It has been already observed, that dropsy is usually but a symptom of some other malady. Some of the causes which induce it, operate for a certain length of time, and then subside spontaneously, together with its symptoms of effusion. Amongst this class of causes may be placed, pregnancy, temporary pressure of tumors, intermittent fevers, and inordinate doses of *arsenic*.

Another class of causes which demands the gravest attention of the physician, consists of functional derangement of important organs, impaired constitutions, protracted debility from excessive loss of animal fluids, habitual intemperance, general cachectic habit of body, chlorosis.

The first indication of cure consists in removing, as far as is practicable, the cause of the dropsy. To do this successfully, it is necessary to enter into a minute investigation respecting the private habits of the patient, as well as the present symptoms. By this means abuse of stimulants, of drugs, and excesses of all kinds, may be guarded against, which otherwise would have operated unfavorably during our curative efforts.

As a general rule, pure air, moderate exercise, an agreeable state of mind, a light and nutritious diet, and a sufficient quantity of warm clothing should be enjoined. A change of location, or a sea voyage, are often powerful auxiliaries in the treatment.

When dropsy depends upon incurable organic affections of the heart or liver, much may be done towards palliating the symptoms and protracting the patient's life, by an avoidance of all those causes which tend to aggravate the primary source of the disease, such as undue physical exertion, violent emotions and passions, &c.

Our efforts should also be directed, without cessation, towards changing the morbid condition of the membrane upon which the dropsy is dependent. Our remedies, therefore, must cover the remote as well as the proximate symptoms of the malady.

The remedies which we deem most valuable in the treatment of dropsical effusions, are: *Apis-mellifica*, *Arsenicum-album*, *Digitalis*, *China*, *Hellebore*, *Colchicum*, *Dulcamara*, *Asparagus*, *Cantharides*, *Scilla*, *Hydrodate-potassa*, *Mercurius*, *Uva-ursi*, *Elaterium*, *Apocynum-cann.*, *Cannabis-ind.*

Apis-mellifica.—In ascites and hydrothorax, the first trituration of the common honey-bee has proved astonishingly efficacious in our hands. The influence which this remedy exercises upon the urinary organs, as well as upon the peritoneum and pleura, is of the most prompt and decided character. In large doses, it causes a sense of fullness, constriction, or of suffocation in the thorax; difficult and anxious respiration; pain and tenderness of the abdomen, increased on pressure or by contact; symptoms worse in the horizontal posture;

great secretion of urine, which is pale or of a straw color, and deposits a reddish or brick-colored sediment; frequent desire to urinate, and strangury.

Our method of preparing the medicine is as follows: Enclose the bees in a close vessel, and expose them to a temperature of 90° (Fahrenheit,) until all moisture has escaped from them, and they are sufficiently dry to pulverize readily: We then triturate five grains of this powder with one hundred grains of sugar of milk for the usual period, and administer the trituration in grain doses from two to four times in twenty-four hours. Whether the *active principle* of this substance consists solely of the *virus* connected with the sting of the insect, or whether other parts possess active properties, we know not; we incline, however, to the former opinion.

The following case occurred in the practice of Dr. Taft, of Hartford. The patient, a boy of twelve years of age, was attacked in July, 1849, with dysentery; after several weeks of medication under an allopathic physician, the acute symptoms subsided, and the evacuations gradually assumed their natural state; but there remained an unnatural fullness and tenderness of the abdomen, some difficulty of respiration, especially on assuming the recumbent position, a dry and harsh skin, and a materially diminished secretion of urine. Notwithstanding the persevering employment of the usual allopathic routine of cathartics, mercurials, and diuretics, the patient continued to grow worse; his abdomen became very much distended with serum, and very tender to the touch, or from even the pressure of the bed-clothes; the respiration became exceedingly laborious and difficult, obliging the sufferer to remain for a good portion of the nights in his chair; impaired appetite, an almost entire suppression of urine, emaciation, debility, small and rapid pulse, anxious expression of countenance, and other urgent symptoms increased in severity.

In this condition he came under the care of Dr. Taft, who administered *Digitalis*, *Arsenicum*, *Dulcamara*, *Mercurius*, *China*, *Sulphur* and *Hellebore*, as the symptoms appeared to indicate, but without any amelioration of the symptoms. In the meantime, the increasing difficulty of respiration, pain, loss of rest and of appetite, had reduced the patient to a serious condition and we were called in council with Dr. Taft, in order to decide respecting the propriety of *paracentesis abdominis*. In consideration of the urgency of the symptoms, and the inefficiency of the remedies which had been used, we evacuated the effused fluid, amounting to sixteen pounds, and advised a second trial of *Arsenicum* and *Digitalis*. No effects, however, resulted from their use; the secretion of urine remained the same, the skin dry and husky, the abdominal effusion continued to accumulate; the oppression of the chest, sense of suffocation and difficulty of breathing gradually in-

creased, and signs of thoracic effusion began to be exhibited. Recourse was now had to the above trituration of *Apis-mellifica*, and with the most speedy and marked results. After two or three doses, a large quantity of urine was voided and the symptoms were all ameliorated. After the remedy had been continued for two weeks, all traces of effusion disappeared, the appetite and strength began to improve, and the respiration became natural and easy. The patient continued to convalesce without any further unfavorable indication, until perfect health was restored. We have witnessed the effects of this remedy in two other cases of ascites, in one case of protracted general dropsy, and in one case of hydrothorax, and with the same favorable results. The powder of dried honey-bees has long been used as a remedy in dropsies by the aborigines of our country.

Homœopathy is in ovarian dropsy, as in many other diseases, *the dernier resort of incurables.*" Consequently, though we may record some successes, our efforts are generally recorded on the roll of failures. Paracentesis has generally been the last resort even of homœopathists; and this resort is an unsatisfactory one. The fluid, in common cases, rapidly accumulates again; especially when the disease appears in the multilocular form. Dr. Simpson, in his recent lectures on the subject, presents it in a more hopeless light than ever. It is therefore desirable to cultivate all the remedial agencies within our reach, that in cases where the fluid can possibly be dispersed without an operation, it may be done. Dr. Craig gives some cases.

1. A lady, aged 74, had twice previously submitted to the operation, the last already some years ago. At this time, (September, 1851,) Dr. Craig emptied the sac without difficulty in the usual way, and about ten pints of fluid were withdrawn. The disease did not return so far as to cause discomfort. In July of the following year she died of old age. After death the sac was found attached by a small pedicle to the left ovary; it was unilocular, and contained about three pints of fluid. Tapping and judicious homœopathic medical treatment had prolonged her life about nine years.

2. A young woman, aged 25, had an ovarian tumor gradually increasing for two years. Eight months of medical treatment had failed. Dr. Craig drew off fourteen pints of fluid. She then took *Apis* for four months. Again tapping was performed, and eleven pints drawn off. She then took *Apis* for a length of time; improved, married, and got well.

3. A lady, aged 36, mother of three children, became greatly emaciated and the abdomen largely increased in size. An ovarian tumor had continued to enlarge for thirteen years. Paracentesis performed, and nine gallons and a half of a thick fluid were drawn off. She soon recovered from the shock, took *Apis-mel.* for a time. In July, 1857.

another operation was performed; six gallons drawn off. Health and flesh then increased. In February, next year, eight gallons; and in August, five gallons. In April, 1859, she died. She had taken *Apis* regularly between the operations, and had always found it increase the urine.

Dr. Schneider, of Germany, has reported an interesting case of an indurated ovary cured by *Conium*. (*Hirschel's Zeitschrift*.)

ARSENICUM.—General appearance of exhaustion and debility; pallid waxen, and sickly countenance; cheeks, lips, and eye-lids bloated and puffy, causing a marked alteration in the expression; dropsical swellings of the extremities and abdomen; mouth and tongue dry; tongue tremulous, red, bluish, or covered with a white coat; urine scanty, dark, and turbid or slimy; general coldness and dryness of the skin; general anasarca, with discharging vesicles on different parts of the affected surface; emaciation; dark colored spots or blisters on different parts of the body; pulse small, feeble, and intermittent.

General sense of prostration; great nervous sensibility; paralytic feeling in the swollen parts; palpitation of the heart; turns of faintness; great difficulty of breathing when exercising, and after lying down; restlessness; anguish and oppression in the thorax and epigastric region; humming and roaring in the ears and head; bad taste in the mouth; loss of appetite; dryness of the mouth and tongue; thirst; tenderness of the abdomen on pressure; difficult and scanty alvine discharges or slight diarrhoea; frequent desire to urinate, although but a small quantity is secreted; anxious, difficult and rapid respiration while in the recumbent posture; heaviness and stiffness of the limbs and body; disturbed sleep, from impeded respiration; dreams; chilliness, alternating now and then with flushes of heat; diminution of sensation and power in the swollen parts; symptoms worse after eating, exercise, and lying down.

General mental uneasiness; fits of anguish and discouragement; disinclination to remain long in one position; apprehension that it is impossible to recover.

In a work by Ruckert,* there are recorded thirty-six cases of ascites, cured or remarkably ameliorated by homœopathic treatment. (Part 26, p. 322.)

Ascites after Scarlatina.—See scarlatina, Vol. I., p. 600.—A girl aged seven. Ascites after scarlatina, with albuminuria. Arsenic restored the urine, and Nitric-acid caused the last trace of albumen to disappear.

Ascites with induration of the liver, cured by Acid-fluoric.

Ascites with disease of the kidneys, anasarca, and hydrothorax, in a child aged ten years, cured by Arsenicum.

* *Klinische Erfahrungen in der Homœopathie. Dropsey.*

DIGITALIS.—This remedy has been found curative in general anasarca, ascites, and hydrothorax originating in organic disease of the heart; also, paleness of the face; blue lips; swelling of the eyelids; coated tongue; scanty secretion of high-colored urine; strong and visible pulsations of the heart; irregularity of the pulse; general paleness of the skin. Digitalis in poisonous doses produces convulsions, and suppresses the secretion of the kidneys.

Vertigo; pressure in the forehead and vertex; ringing and hissing in the ears; want of appetite; flat taste in the mouth; thirst; pressure in the stomach; distention of the abdomen, with stitching pains; pressure at the neck of the bladder, with frequent desire to urinate; throbbing in the chest; sharp stitches in the region of the heart; respiration anxious and difficult on walking or lying down; lassitude and diminished sensation in the inferior extremities; constant inclination to sleep; disturbed sleep; faintness.

Dullness of intellect; vertigo; forgetfulness; gloomy, peevish, and indifferent.

REMARKS.—*Digitalis* has proved most advantageous in dropsy consequent on organic disease of the heart, and in anasarca following scarlatina. Dr. Kurtz considers *Digitalis* in decoction an excellent remedy in this complaint, and that the dilutions are useless.

CASES.—Ascites with organic alterations.—1. A man, aged seventy. Disease of the spleen and abdomen, from the abuse of spirituous liquors, cured by Nux-vom. 100. (*Stern, Journal de la Soc.*)

2. A woman, aged forty-six. Ascites, with displacement of the bladder, the uterus, and vagina. Anasarca cured by Arsenic. (*Rückert*)

3. A man, aged seventy, feeble, lymphatic; ascites, hydrothorax and oedema. Apis, 1000; at first alone, afterwards alternately with Arsen. 50. Cured. (*Rückert*.)

4. A woman, aged forty-four. Miscarriage, followed by uterine haemorrhage; afterwards ascites and oedema. Arsenic relieved, and Helleborus-niger completed the cure.

5. A scrofulous young man, with varices of the legs, cured by Arsenicum, Sulph., China, Lachesis. (*Lore, Journal de la Société*.)

Ascites from disease of the heart. The ascites yielded to Digitalis 30. (*Beauvais*.)

A similar case recorded by M. Lore, (*Journal de la Soc.*, Tom. 2, p. 41,) where Digitalis relieved and removed the symptoms.

Ascites with multilocular cysts. Relief from Digitalis. (*Escalier*.)

Scilla has been employed successfully in ascites and anasarca, by Hartmann, Currie, Noack, and Trinks. Hahnemann did not entertain

a high opinion of this substance as a remedy for dropsy, since its primary effect was to stimulate the kidneys and cause a copious emission of urine, while its secondary effect was always the opposite of this, viz., to suspend almost entirely the urinary secretion.

CHINA.—Countenance pale or sallow, sunken and sickly; general appearance of languor and debility; dropsical swellings in one or more parts of the body; enlargement and induration of the liver; emaciation; dryness of the skin, mouth, and tongue; urine scanty, pale, or dark colored, and depositing a brick-dust sediment; coldness of the whole surface of the body; skin yellow; tremor in the limbs when attempting to walk.

Exhaustion arising from protracted diseases, from excessive loss of blood, and from abuse of drugs; pain and tenderness in the region of the liver; heaviness and pressure in the head from within outwards; humming and ringing in the ears; bitter or flat, insipid taste; loss of appetite; thirst for cold water and acids; oppression of the stomach and abdomen, especially after eating or drinking; constipation; respiration short, rapid, and at times suffocative; nights restless, and sleep disturbed by dreams; great sensitiveness to cold; frequent shuddering when drinking cold water, or when exposed to the air; swelling and stiffness of the limbs; weariness of the limbs, with constant desire to change position; symptoms aggravated by contact, by eating, and at night; low-spirited, nervous, and irritable; sometimes anxious, gloomy, and apprehensive of evil, and at other times indifferent, taciturn or stupid; confusion of ideas; disinclination to physical or mental labor.

REMARKS.—*China* will be found curative in those dropsies which are the result of simple debility, which have been caused by loss of animal fluids, protracted illness, and the abuse of cathartics. It may also be exhibited in anasarca, consequent on attacks of intermittent and other fevers.

A woman had ascites, caused by suppression of the menses, green leucorrhœa, pressure on the bladder, colic, and diarrhoea. *Nux-vom.* removed the abdominal symptoms; *China* restored strength, and *Pulsatilla* brought back the menses, and caused the ascites to disappear. (*Beauvais, Obs. 252.*)

Three cases of ascites, with disease of the spleen, reported by Beauvais de Saint Gratien and Rückert, and collected by Attomyr, cured by *China*.

A woman, aged fifty-two; ascites with anasarca, depression, haemorrhoids, prolapsus of the rectum, &c. Improved by *Nux-vom.*, *Pulsat.*, *Ferrum*, &c., but especially by *China*, which had great effect both on the œdema and dropsy.

Hellebore.—Face and lips swollen, and of a pale or yellowish cast:

fluctuating swelling of the abdomen; general anasarca; spasmodic or convulsive movement of the head and limbs; twitching of the eyelids; dullness and stupor; coldness of the surface; suppression of urine; throbbing or compressive pain in the head; oppression at the chest and stomach; cramp-like pains in the abdomen; frequent desire to urinate, with scanty emission; loss of appetite; nausea, and pain in the stomach and bowels, followed by a loose alvine evacuation; short, dry cough; difficulty of breathing; sharp stitches in the head, chest, and abdomen; heaviness and rigidity of the limbs; symptoms better in the open air; dullness of intellect; weakness of memory; painful stupefaction of the head; frequent sighing and moaning; giddiness on rising up, or walking; confusion of ideas.

REMARKS.—*Hellebore* is particularly recommended in dropsies complicated with intermittent fever, after the fever has been cured by *Arsenicum*; also in anasarca and ascites of children, arising from scarlatina. It has effected prompt cures of dropsical effusions upon the brain, attended with convulsive motions of the head and limbs.

A child, aged fifteen months; ascites, cured by *Helleborus*, 30. (*Ibid.*)

Colchicum.—Face yellow and oedematous; dropsical swelling of the abdomen; oedema of the feet and legs; visible palpitations of the heart; skin dry and cold, or alternating with heat during the night; rapid and difficult respiration; pulse full and hard, or quick and small; urine scanty and dark-colored; nausea, burning and icy-coldness of the stomach; distention of the abdomen, with pressure, and colicky-pains; abdomen tender on pressure; loose and painful stools; oppression of the chest; tearing pains and stiffness in the back, side and limbs; drowsy during the day, but restless nights; symptoms worse during the night, also aggravated by mental labor; tendency to exaggerate symptoms; absence of mind; forgetfulness; dissatisfaction from slight causes.

REMARKS.—This remedy is useful in dropsical swellings caused by atmospheric vicissitudes, excessive mental labor, sudden suppression of the perspiration, and in anasarca consequent upon scarlatina and measles.

Of *Colchicum* Hahnemann says:

“And though the frequent experience of Störck, Marges, Planchon, du Monceau, F. C. Jüncker, Schinz, Ehrmann, and others had not already established the fact, that *Colchicum-autumnale* cures a species of dropsy, still this power was to be expected from it, from the peculiar property it possesses of *diminishing the urinary secretion, and of exciting at the same time a continual desire to pass water*. It likewise causes the flow of a small quantity of urine of a fiery-red color as witnessed by Störck and De Berge.”

Diuretic Action—Case from the Gentleman's Magazine for Sept 1764.

Dr. Störck made experiments on himself and details the results. Among these we notice the specific effect upon the kidneys, characterized by the inclination to urinate, with inability to do so, except in very small quantities and with great difficulty. This effect induced Störck to carry his observations further, and he then discovered that the addition of acids corrected this deleterious influence on the kidney. He therefore prepared a medicated vinegar, analogous to the *Acetum-colchici* of the present pharmacopœia as a diuretic in diseases with a considerable degree of success. Hahnemann says:

"The cure of an asthma attended by hypochondriasis effected by Goritz, by means of Colchicum, and that of asthma complicated with hydrothorax, performed by Störck with the same substance, were evidently owing to the homœopathic property which it possesses, of exciting *asthma dyspnœa*, as witnessed by De Berge. Copabia, Turpentine and Cantharides are used in diseases of the kidneys and bladder, and they act homœopathically in all cases where they are successful.

ASCITES.—After Enteritis.—A boy, aged three and a half years, had ascites after enteritis. Arsen., Digit., Dulcam., China, Sulph. were given without effect. Tapping was resorted to, and a quantity of thick, dark-colored serum was drawn off. Apis did much good; the improvement continued under Merc.-sol.; and Apis, which was again given, completed the cure.

After Dysentery.—A boy, aged twelve. Ascites and hydrothorax after dysentery. Many medicines given without benefit; tapping; after it Arsen. and Digitalis without effect; suffocation imminent; Apis relieved very rapidly and effected a complete cure.

A woman, aged twenty-seven. Ascites after gradual suppression of the menses. Acon. and Bell. were given without much benefit. Apis in trituration at first, increased the urine, then restored some traces of the menses, and a month later the menses became regular. Under the influence of this medicine the ascites gradually diminished. She left after the return of the menses. (*Rückert.*)

Ascites with anasarca, and afterwards hydrothorax, cured by Apis. (*Rückert.*)

Ascites in an aged and lymphatic woman. Cured by Apis. (*Ibid.*)

A woman, aged fifty-eight, in whom anasarca preceded ascites. Cured by Apis. (*Id.*)

Dulcamara.—Face, abdomen, and limbs bloated; urine small in quantity, turbid, and foetid; heat and dryness of the skin; empty eructations; loss of appetite; dry mouth and tongue; great thirst for cold drinks; empty eructations after meals; nausea; restless, hot, and

feverish during the night; constipation; catarrhal symptoms, symptoms worse at night, better on motion; irritable and angry disposition; also scrofulous and phlegmatic constitutions, and great sensitiveness to cold.

REMARKS.—Applicable in dropsies which have arisen from exposure to cold, and general anasarca, consequent on fever and ague, scarlatina, and rheumatic fever.

A child, aged eighteen months. Ascites after a tertian fever, which lasted some weeks. Cured by Dulcamara. (*Rückert.*)

Asparagus.—Countenance pale, wax-like, and bloated; general expression of anxiety and distress; unusual fullness of the chest; coldness of the surface; suppression of the perspiration; urine scanty, straw-colored, and offensive to the smell; visible throbbing of the heart, especially at night; rapid, laborious, and sighing respiration; pulse feeble and irregular; feeble appetite; sense of fullness and oppression after eating or drinking; palpitation of the chest, and rapid and difficult breathing, increased after being in bed for some time; sleep uneasy and disturbed by the oppressed respiration; constant inclination in a child to be carried about in the arms; great languor and disinclination to physical or mental exertion; stitching pains in the region of the chest; fretful and feverish; disturbed by trifles; constant anxiety and apprehension.

REMARKS.—In two cases of hydrothorax following acute attacks of peripneumonia in children of three and five years of age, we have found *asparagus* of signal service after several other remedies had failed. One of the cases was complicated with an organic affection of the heart, and an almost entire removal of the cardiac symptoms followed the cure of the dropsy. We are quite convinced that this remedy will prove one of great efficiency in the treatment of hydrothorax and general dropsy, and we respectfully urge it upon the attention of practitioners. It should always be advised in dropsies as an article of food.

Apocynum-cannabinum.—The bark of the root is the most abundant in active matter, which is chiefly soluble in water. It has been given in decoction, tincture, or in substance.

In palpable doses it has different modes of operation. 1. Emetic; 2. purgative; 3. sudorific; 4. diuretic. It first produces nausea; in further quantity, vomiting; and soon after, copious feculent and particularly watery evacuations from the bowels, which once excited are disposed to continue. It next displays its sudorific properties in a very remarkable manner. Copious perspiration almost invariably follows its exhibition, and it thus exercises a powerful influence in various forms of dropsy. As a diuretic, in some cases, although diuresis was increased, it was not commensurate with the effects produced upon the

disease. In other cases, the discharge of urine becomes free, and in a short time the overloaded tissues are relieved of their burden. We have long been accustomed to employ it in tincture and in dilutions, and regard it as one of the best remedies.

Two cases of ascites and organic disease of the heart. The ascites removed by *Apocynum-cannab.*

Ascites and hydrothorax after *typhus*,—pulse irregular, skin dry, with desquamation; urine scanty and very red, *Apocynum-cannab.*, in mother tincture, two to five drops in water, a tea-spoonful every three hours. Cure.

A man aged 67—ascites, anasarca, and hydrothorax—cured by *Apocynum. (id.)*

Cantharides is recommended in dropsy caused by tonic spasm of the neck of the bladder, and by perverted action of the kidneys. It may also be administered in effusion occurring in the last stages of acute and chronic diseases, as a palliative.

Hydriodate of Potassa is adapted to the oedematous swellings resulting from the pressure of enlarged glands upon the veins. It has likewise proved highly beneficial when administered by us for the relief of dropsy arising from Dr. Bright's granulated kidney.

Mercurius has been used successfully in cases of *chronic hydrothorax*, and in *ascites* from diseased liver. It is worthy of attention in ovarian dropsy, and effusions dependent upon enlargement of the spleen.

Uva-ursi has cured several cases of *ascites* dependent upon abuse of intoxicating drinks, and abuse of drugs. Its influence in restoring the urinary secretions is usually very prompt and satisfactory.

Other remedies which have occasionally been found useful in dropsies, are: *Eluterium*, *Rhus-tox.*, *Lycopodium*, *Bryonia*, *Ol-tiglii*, *Potass-nitr.*, *Iodine*, *Solanum-nigrum*, *Phosphorus*, *Baccar-juniper*, *Buchu*.

A child, aged three and a half years; after scarlet fever, ascites and general anasarca. Cured by infusion of the root of *Bryonia*.

A woman, aged forty—ascites, with œdema of the legs, cured with *Aur.-mur. (id.)*

A child aged five—acute ascites and œdema of the lower limbs, convolvulus arvensis. Cure. (*Id.*)

Beauvais, (Dr. Roth), *Unique Homœop.* T. I., 326, gives the following cases:—*Ascites connected with chronic disease.* A girl, aged seventeen, suffering from chlorosis, brought on by suppression of the menses from a fright; at the same time ascites—*Pulsatilla*, three globules 12th, produced some improvement. Cure after continuing the medicine six weeks.

Ascites with congestion of the liver and spleen, cured by Lycopodium. (*Beauvais Obs.*, 253.)

A woman, aged 50; has had several children; abuse of spirituous liquors. Ascites cured by Lycopodium. (*Id.*)

A robust man, addicted to drinking spirits—ascites with pains in the limbs—much relieved by Ledum-palustre. Bryonia and Arsenic completed the cure. (*Id.*)

A child, aged fourteen, feeble constitution, having had itch two years before. Ascites and anasarca for nine weeks. Cured by Sulph. 6, followed by Sulph. 200. (*Rückert.*)

After Intermittent Fever.—A girl, aged nine, had intermittent fever two years before. Ascites, oedema of the extremities. Lachesis. Cure.

A man, aged 79, having had marsh fever for two years fell into a state of cachexia. Manganum-oxidatum. Cure.

A child, aged twelve. Effusion into all the serous cavities, cured by Convolvulus. (*Id.*)

Ascitic effusion, with hydrothorax, anasarca and oedema of the scrotum. Calc-carb. (*Id.*)

A child, aged eleven. Ascites, connected with a cachectic state, cured by Aur.-mur. (*Id.*)

A woman, aged fifty. Ascites and anasarca in connection with an undetermined disease of the abdominal organs, cured by Mer.-sol. (*Id.*)

ADMINISTRATION.—In the treatment of acute dropsies, we advise the employment of the third to the sixth attenuations, and a repetition of the dose every two or four hours, until effects from the medicine are apparent. In chronic dropsies, we employ the first to the third attenuations, and repeat once or twice in twenty-four hours, until a suitable impression is produced.

Cuprum.—A case is given, by Dommes, of successful treatment by this remedy. A widow, aged sixty-six, on the awful night of March 19, 1848, sprung terrified out of bed and remained sitting in a cold room, in her night dress, till morning. Next day her legs swelled. After employing in vain various aperients and diuretics, she came under treatment April 16. Not only the legs but the whole surface of the body and the abdominal cavity were distended with water; yet appetite and stool were normal; urine dark brown, acid. At the orifice of the aorta I heard the bellows-like sound accompanying the systole. The patient had two years before recovered from inflammation of the lungs; one year ago had diarrhoea, and for three years suffered from occasional haemoptysis. Decoction of Digitalis seemed to relieve the breathing which was somewhat affected; but, after four days the swelling was not diminished nor the diuresis increased. As the urine was shown by the tests to be acid, Sal-ammoniac was tried,

and it gave some relief to the respiration. On the 25th of May, the dropsy was as extensive as it was at any former time; the strength was declining, the eyes sunken, face earthly pale. The acetate of copper was now given. At first ten drops per hour, afterwards fifteen. This effected so rapid a cure, that on seeing her after three days, the physician, who had never seen her in health, scarcely recognized her. In two days more the secretion of urine was enormously increased. The strength restored, and the swelling of the feet so reduced that she could wear her shoes again. After one slight interruption, permanent recovery.

Chlorate of Potash.—Dr. E. J. Fountain, of Davenport, Iowa, (*Am. Med. Monthly and N. Y. Review*), thus sums up its virtues: “Believing it to be a tonic, alterative, and blood-depurant, superior in many respects to anything in our *materia medica*, I do not hesitate again to urge its claims upon the attention of the profession.

“From the time when (in 1851) I discovered its utility as a remedy for mercurial ptyalism, I have been testing its properties in many directions, and with constantly increasing confidence in its virtues, and (in the language of Dr. Hutchinson) ‘its scarcely less than wonderful power.’ I believe scrofulous and every form of tuberculous diseases, the sequelæ of the exanthemata, adynamic fevers, and asthenic types of disease with depressed vital powers, every condition involving an imperfect aeration of the blood, and many derangements of the system resulting in abcesses, eruptions, ulcers, &c., are curable by it. In my opinion it has this wide range in its application by reason of its oxydizing properties.”

Soon after writing the above Dr. Fountain caused his own death by taking an excessive dose of his favorite remedy. He took at one dose an ounce of Chlorate of Potash. “The most violent results ensued, first producing excessive secretion from the kidneys, then inflammation of the stomach and bowels. From the morning of March 22, (1861,) when the medicine was taken, till 1 P. M., a great increase of the urinary secretion showed the specific effect of the drug. From 5 A.M., of the 23d, until his death on the 29th, at 4 P. M., there was no secretion from the kidneys whatever.

Paracentesis Abdominis, or Tapping.—This operation should always be deferred as long as possible, in order to allow a reasonable time for the action of the medicines. If, however, the accumulation becomes very great, and the symptoms are so urgent as to prevent all exercise, destroy rest in a sitting or recumbent posture, and thus serve to wear out the energies of the system, the operation should no longer be delayed. At the same time the most judicious medicinal treatment should be perseveringly directed to both the proximate and remote symptoms of the malady. The operation of tapping is of itself

simple, and entirely unattended with danger, when proper precautions are used ; but as the effusion usually takes place with much more rapidity, after the serum has been evacuated, than before, it will be apparent that *parecentesis abdominis* should only be had recourse to when the symptoms are particularly urgent.

On the question of the propriety of making persistent trials of internal remedies before resorting to a surgical operation, Dr. Leon Simon says : "The facts recorded by homœopathists prove beyond contradiction that they can remove peritoneal effusions by internal treatment, when the remedies are selected according to the law of resemblances (similars) administered in a sufficiently dynamized state."

There is a condition, however, in which the operation should have precedence : "Where the effusion having gained a considerable bulk, causes threatening accidents and prevents all kind of absorption by the compression which it exercises on the vessels of the abdomen. In these circumstances the action of the liquid on the peritoneum, the kind of maceration which results from it, and the possible transudation of the serosity, render immediate tapping necessary. And if it happens that the disease arises from a simple congestion of the peritoneum, or a curable affection of the viscera, we should then be able to treat afterwards and follow the consequences pointed out by M. Geraud, in order to prevent the reproduction of the ascites."

When ascites depends on an incurable organic affection, on tubercles, degeneration of the liver, the spleen, or disease of the heart, &c., the operation becomes only an extreme means to be used in cases of imminent danger, and even then the canula left in position might be productive of more danger than advantage." Here we may make what use we can of internal remedies, hoping little or nothing from an operation which even Velpeau considers an extreme resource.—(*Traité de Medicine Opérative, T. IV., p. 2.*)

4. HYDROTHORAX.

DEFINITION.—Serous effusion in the pleura not due to inflammation. The effusion is composed purely of serum, unmixed with inflammatory products. The affection *always* occurs as an effect or complication of some other disease; and more frequently it co-exists with general dropsy incident to structural disease of the heart or kidneys.

DIAGNOSIS.—Distinguished from pleuritis by the absence of the inflammation of the pleura, as lancinating pain, tenderness on pressure, and cough. Physical signs show a quantity of liquid in the pleural sac, displacing the lung, perhaps causing enlargement of the inferior portion of the chest and depressing the diaphragm. But these symptoms are also present in pleuritis.

The chief points of distinction between the two diseases are: In chronic pleuritis a large accumulation of liquid causes a visible change in the size, form, and expansibility. In hydrothorax such changes are not seen, for such an accumulation in both sides of the chest is incompatible with life. Only a moderate amount of effusion produces a great disturbance of the respiratory function; there is a higher degree of accelerated breathing, dyspnoea, lividity of the surface, &c., than belongs to chronic pleuritis in a case in which the whole of one side is filled with liquid. Also, the pathological conditions associated with hydrothorax, such as ascites, hydro-pericarditis, organic disease of the heart, general debility, render the system less able to bear up under a diminution of the respiratory function, than in a majority of cases of chronic pleuritis.

In cases of cardiac and venal dropsy, the affection is always double. The causes act easily on both sides, their *modus operandi* being purely mechanical. For this reason it is impossible that the quantity of effusion should ever be sufficient completely to fill the chest, as death must result before such accumulation could take place.

"In hydrothorax friction sounds do not occur. The condition for their production, viz., roughening of the plural surface by a deposit of lymph, is incident to inflammation, and does not obtain in a purely dropsical affection. This is a negative point. A positive point is, that in case of non-inflammatory serous effusion, the liquid as a rule, if not invariably, can be made to change its level by varying the position of the patient; the quantity of liquid ever becoming very large, and the pleural surface remaining free." This test of effusion is generally available, while in pleuritis it is employed successfully in a certain proportion of cases only.

5. HYDROCELE, or DROPSY OF THE TESTICLE.

A description of this disease is appropriate to surgery rather than to medicine; but, as the usual method of cure serves to corroborate the truth of the *homœopathic law of cure*, we make some allusion to the subject in this place.

The fluid of hydrocele is situated within the *tunica vaginalis testis*, commencing at the lower part of the scrotum, and gradually extending upwards until it reaches the external abdominal ring. The tumor is pyriform in shape, firm and elastic to the touch, and unattended with pain. It is only troublesome from its bulk and weight.

Much difficulty is sometimes experienced in distinguishing this disease from enlargements of the testicle, and in more than one instance we have seen this gland destroyed by injudicious attempts to draw off water from chronic enlargements of the substance of the gland. Gene-

rally the dropsy of the testicle may be recognized by its peculiar elasticity, its lightness, form, its origin at the lower part of the scrotum and its gradual extension upwards; and lastly, by its transparency. By placing the swelling in front of a lighted lamp in a dark room, its character will be apparent from its transparency. But in some cases, from the great thickness of the *tunica vaginalis*, or the dark color and density of the enclosed fluid, no transparency can be perceived. In these instances we must be guided by the fluctuation, lightness, form, painlessness, and general history of the case.

Accumulations of fluid also occur within the membrane of the spermatic cord, constituting the disease known as *spermatocele*. This is a local affection, analogous in its nature to hydrocele.

Hydrocele occasionally occurs as a congenital disease, arising from an imperfect closure of the *tunica vaginalis*, and thus permitting the fluids of the abdomen to descend into its cavity.

OPERATION.—The most successful means of treating hydrocele is to evacuate the serum by means of the trochar and canula, and then to create a healthy medicinal action in the *vaginalis* with suitable injections. Merely drawing off the fluid is seldom of any avail in affecting a cure, for the morbid condition of the membrane is still remaining, and the exhalents again fill up the cavity. Change then the morbid condition of the structure, and supersede it by a new and different, though similar action, and you will cure the disease. But it will be said that by applying our remedies directly to the structure, we are obliged to create more inflammation than is necessary to effect a cure. Show us, then, how it can be effected by internal remedies with any kind of certainty,—point us to a specific which will reach the case, and we will be the first to adopt it.

The most reliable medicine we have ever used as an injection, is a mixture of one part of *Tincture of Iodine* to two parts of water. Let this be injected within the *tunica*, and remain for five or ten minutes, or until sharp pains are experienced in the gland and the spermatic cord, after which carefully permit the fluid to escape from the canula. The use of *Iodine* is not likely to be followed by undue inflammation or sloughing, yet it almost invariably suffices to effect a permanent cure.

Other injections have been highly extolled by surgeons, as solutions of Alum, Sulphate of Zinc, and Sugar of Lead, Port Wine, &c.; but they have too often failed in our hands to inspire us with confidence in their virtues, while uniform success has given us every reason to be satisfied with the *Iodine*.

Cuse of Cure by Dr. Hastings.—A boy was affected with hydrocele almost from his birth. At the fifth year a skillful surgeon operated upon it, discharging the water. In a fortnight the fluid accumulated. The surgeon proposed a second operation to be completed by

a stimulating injection, but it was postponed till the child should be older. The dropsical accumulation was becoming very large, and Dr Hastings was permitted to prescribe. He gave Rhododendron twelfth dilution, three globules night and morning for three days; then pause three days and repeat. A lotion was applied of:

R. Tr. Rhodod. chrys. 3ij.

Aqua font. 3vi.

Apply twice a day after fomenting the scrotum. The hydrocele was cured, and the boy, now seven years of age, has continued well.

SCROFULOUS INFLAMMATION OF THE SYNOVIAL MEMBRANE OF JOINTS.—HYDRARTHUS.

In joints we meet only with different examples of the connective tissues,—bone, cartilage, synovial, areolar, and fibrous tissues. A connective tissue may be said to consist of “a number of cells still retaining their nuclei, round each, or each group of which a quantity of tissue material is collected; the quantity of the tissue is derived from the consistence and constitution of the inter-cellular substance. Thus the cells of cartilage, bone, fibrous, and areolar tissue, have probably the same proteine contents, but are surrounded—the one by chondrine in a solid form, the other by lamellated bone material, the third by gelatine in a fibrillated arrangement, and so on. The function of these tissues is not vital, but mechanical; the inter-cellular substance, therefore, whereon the function depends, has no vital constitution, but each district or band is dependent upon its own cell for its support. The nutrition of these tissues is kept up by the selecting and organizing quality; their repair by more abundant multiplication, their absorption by excessive generation of the cells. Thus it is that the connecting tissues are capable of repair by like material through fresh formation of cells, which, by the law of organic descent, develop similar tissues. The means of this repair are the simplest form of the inflammatory process, as we see in the union of a wound by the second intention.” (Barwell.)

A *scrofulous synovitis* is, in its first characteristics, not essentially distinct from another slow inflammation of that tissue,—but the difference lies in the indisposition to further development. If there have been a breach of tissue from a wound, the gap must be filled up by cell-generation, which in such a case is called granulation. As long as the patient remains in a good state of health, the older cells—that is, those of the deeper layers of this formation—assume the fusiform shape, and form gradually into the fibrous material, which forms the scar; but, when the health begins to flag, the granulations do not change in that manner, but cells remain, generally, round, increased

unduly, and form those large, flabby exuberant growths which require repression, caustic, or other means to stimulate them to healthy action, and to keep down their generative tendency.

On this principle we distinguish between the healthy and strumous synovitis. In the former the membrane and sub-synovial areolar tissue generate cells, which, if the constitution be good, form new fibrous tissue, causing some thickening, and only to a slight degree interfering with the action of the joint. In the latter cells also are generated; but, instead of making fibrous tissue, they remain in the form of spongy granulation tissue, and produce that form of disease which Sir B. Brodie has named "Morbid change of structure of the Synovial Membrane." The best remedies are *Kali-hydrio.*, *Mer.-iod.*, and *Sul.-iod.*

8. SPINA BIFIDA.

PATHOLOGY—In some cases the opening does not extend far into the canal; and the spinal marrow is not compressed or deranged in function. Of these many may be cured. The external tumor in these cases is generally covered with integuments and appears very firm, not easily compressed, very elastic to the touch, and yet fluctuation is perceptible; the dura mater is the only lining membrane of the cavity in the tumor, and the fluid contained does not extend far into the canal after passing the aperture in the spinal apophysis.

In the other cases which are much the most frequent there is a thin almost transparent membranous covering in many parts of the tumor, and sometimes on the greater portion of it. The tumor is easily compressed and there is less of voluntary action in some of the muscles, sometimes with derangement of the secretions. Here the fluid is contained in the arachnoid membrane, and may extend the whole length of the canal. M. Bichat and other anatomists say it may extend even to the lateral ventricles of the brain. There have been some cases in which the head was enlarged like that of a child with chronic hydrocephalus. Such cases have perhaps been uniformly fatal.

The Ligature.—This mode of operation is preferred when the base of the tumor admits its application: Apply it first tight enough to produce moderate inflammation. Afterwards draw it closer as it does not then produce so much pain or so extensive sympathetic effects. All cases cannot be cured in this way.

In some this treatment would destroy the child. Dr. Trowbridge (*Louisville Med. Jour.*, 1840), says he has seen about thirty cases, some of which were in every portion of the spine, and were of various sizes and appearances. He had tried their treatment by puncture, incision ligature, &c., and in many of them he failed. But some were curable.

Case by Dr. Trowbridge.—Miss B., of Jefferson County, New-York, aged 25, phlegmatic temperament, mind retiring, delicate, was born with a considerable tumor over two of the lower lumbar vertebrae. The tumor was protuberant, and was pronounced spina bifida; and it was expected to prove fatal in a few weeks from birth. For twelve years she suffered but little from constitutional derangement, except feebleness; the tumor enlarging with the growth of the body. From this time to the age of twenty-five she had much extreme pain in the cerebrum, disturbance of mind, with vertigo, confusion of intellect, and some neuralgic symptoms. The secretions were natural; and the natural developments of childhood and womanhood were without unusual delay. She was of middle stature, and with perfect use of all the muscles of the body. She was during these paroxysms of pain and nervous excitement injudiciously treated by bleeding, cathartics, and Opium; but the tumor continued to enlarge. Dr. Trowbridge found it fifteen inches in circumference, covering the upper part of the sacrum and four lumbar vertebra, of conical form, rising about seven inches, covered with the integuments and distended with fluid. She had managed her dress to prevent the deformity from being noticed. Riding in a carriage had pressed and injured the tumor, adding something to the pain and nervous excitement; all exercise increased her sufferings; and thus enlargement and concussion of the tumor continually added to her distress as well as her danger.

Operation.—Dividing the upper part of the tumor with a scalpel five inches, I encircled the prominent part of the integuments within two elliptical incisions. Twenty-two ounces of fluid resembling pure alcohol was discharged. On its standing till cold, it did not show serum or lymph, but remained clear like distilled water. These incisions and removal of the tumor exposed its interior and bottom. It was lined with the dura mater, distended and enlarged by the fluid. Two of the lower spinous processes were wanting. A cavity was presented showing the spinal cord in its natural position. The divided parts were brought together by adhesive straps, and compresses were applied, with a bandage over them. She suffered little except from the former symptoms of concussion, which were troublesome for a few months. For the first five days there was constant secretion and discharge of fluid, with neuralgic symptoms, with increased arterial excitement, these were checked by morphine and warm fomentations over the spine. Suppuration was free. On the tenth day there was mitigation of all the symptoms. There was a sound state of the parts with depression of the skin over the part. She had had continued good health when seen eight years afterwards. The proper constitutional treatment, which has often succeeded alone, consists of *Sulph.*, *Calcarea*, *Calc-phos.*, *Kali-hyd.*, *Silic.*.

Iodine.—It was in serofulous forms of dropsy that Iodine gained its first reputation.

The history of Iodine, says Dr. Forget, "is very remarkable. First introduced as an anti-goitre medicine, it was long before it obtained credit in scrofula. For some years it has had a tremendous run. It began by curing hydrocele, then a bold hand introduced it in hydrarthrus, then it passed to ascites; then to hydrothorax; ovarian cysts; hydrocephalus. 'Ah, there is the remedy of remedies, the specific of the present age!'"

For centuries, says Dr. Manson, writing in 1825, "Burnt sponge was the chief remedy in the cure of bronchocele. (*Medical Researches*, p. 8.) Chemistry discovered Iodine in sponges." "In not a single instance has the medicinal powers of an important remedy been made by science. They have all been accidental. Tradition, descending from periods when no medical science existed, accident, fanciful hypothesis, and hap-hazard experiments have been their sources." (*Henderson.*)

URÆMIA.—URÆMIC POISONING.

Consequences of the Retention in the Blood of the Constituents of the Urine.

1. "In a variety of diseases occasionally accompanied by albuminuria, such as cholera, scarlatina, diabetes, &c., the constituents of the blood become changed by the introduction either of a poison or some other substance. If this occur, it is quite manifest that the blood is no longer normal, and because of its altered condition its elaboration in the kidney will also be modified; so that in lieu of the ordinary elements contained in the urine, we shall sometimes recognize albumen, an absence of urea and other pathological phenomena. May this not be satisfactorily explained on the principle that the product of endosmosis will be modified in proportion to the changes in the fluid on which it acts? Again: the blood is changed in pregnancy" by various other well-known circumstances.

2. *Structural or Dynamic Change in the Kidney* may result in albuminuria, though the precise conditions on which it depends be unknown; the presence of albumen in Bright's disease and scarlatina "may be due to a desquamation of Bellini's tubes, yet this cannot be said of many other affections of the kidney in which albuminuria exists, but in which no desquamation takes place. Experiments have been made by Segalis and by Dr. Brown-Sequard (*Experimental Researches applied to Physiol. &c.*, Phila. 1852, p. 13,) which seemed to show "that the urinary secretion is not absolutely dependent upon the nervous system, while on the other hand it has been satisfactorily shown that the nervous system may, under certain circumstances, exer-

cise a marked influence over this secretion. Marchand "has produced in a dog not only all the symptoms of uræmia, after placing a ligature on the renal nerves, but also discovered urea in the blood, and in the matter vomited by the dog." Albuminuria has also been produced by different experimental physiologists by operating on the sympathetic nerve of the neck, the cerebellum and the medulla oblongata ; and we have sufficient evidence to establish the fact of the direct influence of the nervous centres—when diseased or injured—"over the urinary secretion; and it is quite possible that the irritation of the uterine nerves during pregnancy, and in many of the diseases, both organic and functional, of the uterus itself, may, through reflex action of the medulla spinalis, produce various morbid changes of the urine. The influence of mental emotions, as fear, grief, and anxiety have long been observed.

3. *Pressure on the Renal Veins.*—Robinson, Meyer, and Frerichs have abundantly proved that a ligature tied more or less completely around the renal veins will cause albumen to pass from the blood into the urinary secretion ; and urea, to say the least, is not a very virulent poison ; its excess in the blood will not *per se* produce uræmic intoxication, nor will it explain the numerous phenomena which are so frequently found to accompany its presence in the circulation. May not these phenomena, then, be produced by *some other agent* which has generally happened to be associated with urea in the diseased condition called uræmia. Frerichs has attempted to demonstrate that uræmia depended neither upon a diminished quantity of urea in the urine, nor upon an excess of this substance in the blood, nor upon albuminuria ; but that it is traceable solely to Carbonate of Ammonia in the system, which, he says, is formed through the agency of a ferment from the urea itself: or, in other words, "that uræmia is exclusively due to the transformation of urea into the Carbonate of Ammonia." Dr. Bedford says that "there is no proof as to the manner in which this transformation is accomplished ; but the major point, viz.: dependence of uræmia on the presence of Carbonate of Ammonia seems to rest on strong and cumulative testimony. Some of this testimony may be summed up in few words :

Orfila produced convulsions in an animal by giving it Carbonate of Ammonia. The animal became convulsed and died. Brown-Sequard has shown that Carbonate of Ammonia, injected into the stomach, does not poison ; but it is absorbed slowly and passes off through the lungs with Carbonic-acid. But if it be injected in a certain amount into the blood, it has time to act on the nervous system and to cause convulsions before it is expired. Dissection of those who have died of uræmia shows that there is in these cases no organic lesion of the nervous centres, showing that death results only from direct poisoning.

Carbonate of Ammonia has been detected in the stomach and intes-

tines of animals after the removal of the kidneys, and in the matters vomited by patients affected with cholera; also in certain cases in the blood, and in the exhalations; but the bearing of these facts was not appreciated till Frerichs demonstrated the truth of the following propositions: 1. *That in every case of uræmic intoxication, a change of urea into Carbonate of Ammonia takes place.* 2. *That the symptoms which characterize uræmia can all be produced by the injection of Carbonate of Ammonia into the blood.*" In his experiments he "has frequently detected the alkaline salt in the expired air of animals deprived of their kidneys, and into the veins of which he had injected urea; these animals remained quiet and awake as long as the expired air was not impregnated with the Ammonia; but the moment the latter was observed, the various disorders of the nervous system characteristic of uræmic poisoning developed themselves. These views of Frerichs will necessarily tend to the settlement of a vexed question, which has called forth the ingenuity of both the physiologist and chemist. It may, however, be that the future will reveal the existence of other poisoning materials in the blood which, to the present time, have eluded observation; and in their recognition we may find additional causes for the production of toxæmia. It has indeed been suggested that, in Bright's disease, the accumulation of oxalic acid in the blood will develop the symptoms of uræmic intoxication.

In cases of puerperal convulsions Brann attributes the death of children to the same cause as that of the mother who dies from uræmic convulsions, viz.: to poisoning by Carbonate of Ammonia, *which poison is found in the foetal blood.*

In Nov. 1860, Dr. Richardson read a paper on this subject before the Medical Society of London, in which the following points of interest are presented:

DIAGNOSIS.—The pupil is usually fixed in uræmia, and in most cases is dilated, though in one case it has been seen contracted to a pin's point. Frerichs has said that there is evidence of excess of Ammonia in the breath during the acute attack; but this is not universal, for in persons suffering from kidney-disease, and in whom uræmia is a probable occurrence, the breath at the best of times is charged with Ammonia to an extent greater than is normal. In these cases the lung is supplemental to the kidney, each organ trying to eliminate all it can of the accumulating poison. If such a patient takes congestion of the lung, the elimination from the lung is suspended, and then uræmic symptoms advance. In some examples the suspension of the secretion from the kidneys is sudden, and uræmia suddenly follows, and the breath becomes suddenly ammoniacal. Another characteristic of the coma from uræmic poisoning, as distinguished from that by poisonous doses of narcotics, is that the patient under the former will often rally and

regain all his consciousness for a time, sinking again into forgetfulness and even dying unconscious in the end. The poison may not be simply urea, it may be some combination of ammonia into which carbon enters, as the carbonate. (*See Diseases of the Kidneys.*)

GENUS II.—LITHIA.—URINARY CALCULI.

A satisfactory explanation of all the phenomena attendant upon the formation and development of calculous concretions in the kidneys and bladder has not yet been given. Chemistry has, indeed, afforded us much accurate knowledge respecting the composition of the different varieties of calculi; but we still remain in ignorance of the real causes and nature of the abnormal action, the peculiar condition of the organism requisite to originate this action, and of the specific medicines capable of effecting cures. The data upon which modern physicians have founded their prescriptions may be more scientific and accurate than those of the ancients, but we are not aware that the practical results which they have obtained are in any great degree more decided or favorable. The ancient allopathists attributed the formation of stone to the union of the "*terrestrial and tartareous parts of the blood with the clamminess of the vicious lymph, that continually flows by with the urine, and further compacted together by the salts with which the urine is laden.*" (*Salmon.*) And for the cure they prescribed *venesection, opiates, mercurials, diuretic infusions, and decoctions, and "lithontriptics," or "stone-dissolving remedies."* Modern allopathy attributes calculous depositions to a superabundance of uric-acid of the phosphates of lime, magnesia, and ammonia, oxalate of lime, &c., in the blood and urine, and they also prescribe blood-letting, opiates, mercurials, diuretics, and "*stone-dissolving remedies,*" but with no more success than their heathen predecessors. To what extent homœopathy may be able to combat this formidable disease, further time alone can determine; but so far as the observations and experience of our practitioners extend in this class of affections, our method of practice has been highly satisfactory. Our system is especially adapted to correct those peculiar diatheses upon which the formation of calculi depends.

Calculous affections have been observed to prevail in some countries more than others; even in some portions of the same country they may be common, while in other sections they will be unknown. The disease is rarely seen in very cold or very hot latitudes. English surgeons assert that it never originates in the East Indies, and it is supposed to be of very rare occurrence in the Northern kingdoms of Europe.

Children and old people are not subject to the disease, and it seizes especially upon those in whom gout is hereditary. Indeed, this gouty

diathesis is so common in individuals afflicted with calculi, that many suppose that the urine exercises but little if any influence in their formation, but that metastasis of gout to the mucous membrane of the urinary passages, determines the formation of these calculous concretions. Thus, Frank, in his "Traité de Pract. de Med., p. 367, Vol. II, says: "The attacks of calculous affections, like those of gout, are preceded and accompanied by languor of the stomach, nausea, oppression, eructations, borborygmi. In inveterate gout, this plegmasia gives rise to calculous concretions, formed of a material combined with uric-acid, and which do not differ from urinary calculi, except in consistency and form. Suppose now that fixed gout, which produces calcareous concretions in the articulations of the great toe, attacks the mucous membrane of the bladder, *may it not become the source of calculi in this viscus?*"

Calculi have been found in the brain, lungs, bladder, liver, spleen, gall-bladder, uterus, the articulations, and the soft parts of nearly every portion of the organism; but the urinary organs are by far the most common seat of these formations. Several years since we saw taken from the upper part of the left lobe of the lung of a miller, two concretions of a chalky appearance, but hard and tough, and of the size of a goose-egg. Concretions of lithate of ammonia are also common in all parts of the body in gouty patients.

Prout has divided the mechanical deposits from the urine into three classes: First, *pulverulent, or amorphous sediment*. Second, *chalcedony sediments, usually denominated gravel*. Third, *solid concretions or calculi, formed by the aggregation of these sediments*.

The sediments of the first class are held in solution by the urine until it is discharged from the bladder, when they are gradually deposited in a state of fine brown or yellow powder. These sediments are generally composed of "two species of neutral saline compounds, viz.: the lithates of ammonia, soda, and lime, tinged more or less with the coloring principle of the urine, and with the purpurates of the same basis, and constituting, what are usually denominated *pink* and *lateritious* sediments; and, secondly, the earthy phosphates, namely, the phosphate of lime, and the triple phosphate of magnesia and ammonia, constituting for the most part, sediments nearly white. The two species of sediments are frequently mixed together." (Prout.) The sediments of the second class, or *gravel*, are found in the urine in regularly crystalized grains, varying in form and color in accordance with the constituents of which they are composed. The lithic acid crystals are much the most common, and may be distinguished by their red color. The crystals of the triple phosphate of ammonia, and of magnesia, are of a white color, while those of the oxalate of lime are black or dark green.

Prout supposes that two-thirds of the whole number of calculi originate from lithic acid; and when we bear in mind the constant presence of this acid in the urinary organs, and its proneness to form hard, inodorous concretions, of a yellowish brown color, the supposition will not appear unreasonable.

Chemists have described many different varieties of calculi; amongst which the following are the most common:

First. The lithic or *uric acid calculus*, formed by concentric lamellæ, presenting a light-brown or reddish color, and a general appearance something like wood. These calculi are infusible by the blow-pipe, but may be slowly evaporated, until a white residue of white ash remains. They are soluble in alkaline solutions, which, on this account, are supposed to be valuable as remedial agents; but they are not dissolved by muriatic or sulphuric acids. The lithic acid diathesis prevails in childhood and at about the age of forty or fifty, and the urine voided in these cases is generally *acid*, and the deposited sediment of a *red color*.

Second. The calculi of most common occurrence after the variety last described, are those composed of a triple combination of *phosphoric acid, magnesia, and ammonia*. They are of a lightish gray color, indistinctly laminated, with an "uneven surface, and covered with small shining crystals." This variety is not soluble in alkaline solutions, but may be partially dissolved by muriatic, nitric, and sulphuric acids, and imperfectly fused by the blow-pipe. The urine in this case is very foetid, and the sediment deposited of a white color, "resembling mortar." Sir Astley Cooper asserts that this kind of calculus is very apt to be reproduced after lithotomy, and on this account advises the postponement of operations in these cases until the morbid diathesis is corrected.

Third. Not a very common variety is the *mulberry calculus*, of a dark-brown color, uneven surface, and very compact, heavy and hard. It consists of *oxalate of lime*, and is partially soluble in muriatic and sulphuric acids, but the alkaline solutions have no effect upon it.

Fourth. *The phosphate of lime calculus* is in a few instances found pure, but usually it exists in combination with uric acid and phosphate of magnesia and ammonia. It is laminated, polished, of a pale-brown color, soluble in muriatic or nitric acid, and may be fused by the blow-pipe. They are of small size, and are generally found in the *prostate gland*.

Fifth. *The cystic oxyd calculus* is another variety of rare occurrence, of a yellowish hue, not laminated, soluble in acids and alkaline solutions, and emitting under the blow-pipe a foetid odor.

Sixth. There is also the *fusible calculus*, composed of a mixture of the triple phosphate of magnesia and ammonia, and of the phosphate

of lime ; of a white color, and fusible by the blow-pipe. This kind of calculous deposit is occasionally seen between the prepuce and glans penis in old cases of phimosis.

Seventh. The constituents of different kinds of calculi are sometimes deposited in distinct alternate layers in the same stone, when it is called the *alternating calculus*.

Other varieties have been described, like the *compound calculus*, the *lithate of ammonia calculus*, and some others.

The presence in the bladder or kidneys of any solid substance, whether introduced artificially, or formed naturally from lithic acid congestions, or clots of blood, favors the formation of calculi. Whether the cause of these deposits in the urinary is attributable to the peculiar composition, or the compact structure, or the comparative temperament of nuclei we are unable to determine ; but all are aware of the fact, that catheters, bullets, splinters, or any other solid substances accidentally introduced into the bladder, become speedily coated over with urinary sediments, which are converted into hard crusts.

Calculi are more frequently observed in the male, than in the female sex ; but this circumstance has been attributed to the difference in the structure of the urinary organs. The urethra of the female being shorter and easily dilated, gives passage without difficulty to gravel and small calculi, which in the long and contracted male organs would be obstructed either by causing spasmodic contractions, or from an actual want of room to pass.

It is said that the *right kidney* is far more commonly the seat of these formations than the *left*, that there form is generally spheroidal and that their average weight is from one to two ounces. Sir Astley Cooper, however, expresses the opinion that the majority of urinary calculi weigh less than one ounce each.

Calculi may originate in the kidneys, the bladder, or the prostate gland, but the first organ is the primary seat of a large majority of cases, as is evident from the fact that the pains are almost always confined to the region of one of the kidneys, in the first instance. It is probable that the *nuclei* of most stones found in the bladder, are first formed in the kidneys, and then conveyed through the ureters into this viscous to serve as the foundation of still further deposits from the urine. We have seen a stone formed on a cedar pencil.

DIAGNOSIS.—A calculus may remain in the kidney or bladder for a long time, without exciting much pain or uneasiness. The patient experiences perhaps a more frequent inclination to urinate than natural, and after violent exertion on horseback or in a carriage, has temporary pains in the region of the organ affected, but in other respects he feels well. This state of things may exist for an indefinite length of time, when, if the stone is situated in the kidney, some exciting cause may

operate, and give rise to what is denominated "a fit of the stone." In these instances the patient is usually attacked, and suddenly, with severe cutting pains in the region of the kidney, which increases as the stone passes along the ureter to the bladder, sometimes extending to the groin, the cremaster muscle, or along the crural nerve, as it passes over the nerves connected with these parts. During the paroxysm, the pain is often of the most violent and intolerable character, and is accompanied with continual nausea, vomiting, inability to retain anything upon the stomach, frequent desire to urinate, high-colored and sometimes bloody urine, bent position of the body, with the muscles flexed as much as possible, heartburn, painful retraction of the testicle, irritable bladder, and febrile symptoms. There is often a remission of these symptoms for a longer or shorter period, during the descent of the stone through the ureters, and the paroxysm now and then comes on, and subsides suddenly and permanently, the stone not having effected an entrance into the ureter.

After the stone has passed into the bladder, we have the following symptoms: frequent inclination to urinate, "the patient making the first portion with ease, and complaining of great pain coming on when the last drops are expelled;" (Earle,) sudden stoppage of the current of urine, in consequence of the stone moving in front of the ureters; itching and tingling at the extremity of the penis; difficulty or absolute inability of retaining the faeces when urinating, on account of the sympathetic irritation of the rectum, "sense of weight and pressure at the lower part of the pelvis;" dull pain at the neck of the bladder; bloody, mucous, or purulent urine; pains in the region of the bladder, increased by exercise, especially riding on horseback or in a jolting carriage; febrile symptoms, irritability, loss of appetite, emaciation, inability to sleep or rest quietly, night or day. In boys the prepuce generally becomes much elongated, from their constant habit of pulling at it, to relieve the itching in the glans. After the stone has continued in the bladder for a considerable time, the organ becomes very much contracted, its coats become thickened and diseased, and the patient sinks under the constitutional derangement consequent upon the protracted irritation of the foreign body.

It will be observed that all of the symptoms which we have enumerated, are simulated by other affections of the urinary organs. Thus, simple *nephritis* gives rise to the symptoms of calculus of the kidneys, and inflammation of the prostate gland and bladder, to those of stone in the bladder. But in some instances the patient can actually feel the motion of the calculus, as he turns over from one side to the other. This circumstance, taken in connection with the abrupt stoppage of the stream when urinating in consequence of the stone getting before the urethra, and the occurrence of severe pain after the urine has been

mostly evacuated, in consequence of the stone coming into more direct contact with the walls of the bladder, will enable us to decide with much certainty respecting the presence of a stone.

But the only *positive* indication of a calculus is our ability to *strike it* with a *sound* introduced into the bladder; and a prudent surgeon will never cut for the stone unless he can *feel* it with his sound immediately before he commences his operation.

So long as a calculus remains in the kidney it does not always manifest its existence by severe or even perceptible pain; but as soon as it becomes dislodged from that position, and attempts to pass the narrow tube of the ureter on its way to the bladder, it inflicts excruciating torture. It may have been long in the process of formation, and yet the only pain which led us to suspect its presence, came on without a moment's warning. It is common for it to remit as suddenly, and then it is presumed that the calculus has passed by the ureter into the bladder. Soon after this remission of the pain it is common to find indications, more or less distinct, of the presence of stone or gravel in the bladder.

In some cases the pain occurs in frequent paroxysms, each one of which is regarded as a true nephralgia calculosa, and is attributed to the passing of a new calculus down the ureter. We have seen one case in which the paroxysms of pain were of the greatest severity, returning often with different degrees of intensity for more than two years. The patient, a young lady, was subjected to different systems of treatment without any real benefit. The frequent passing of calculi from the bladder seemed to justify the opinion of different physicians that the neuralgic pain in the region of the right ureter, which became more and more frequent, more and more severe, was dependent on the irritation of larger calculi, some of which passed down to the bladder, and that others would soon follow. At length some imperfect soundings were supposed to certainly detect stone in the bladder sufficient in size to account for all the remaining symptoms. An attempt was made by some physicians of some reputation to triturate the stone into fragments, and extract it from the bladder. The effort gave much irritation, and ended in proving that there was no stone there. After this failure we first saw the patient, and found nothing but palliation possible. After a few weeks she died, and we made a full *post mortem* examination in the afternoon of the following day.

We found that death had resulted from tubercular disease of the kidneys, terminating in total disorganization of the right one, and leaving clear marks of the same condition in the other.

There were no calculi in the bladder, and no accumulation in the ureter; but there were phosphatic calculous deposits in both kidneys, resembling those often seen in the lungs.

The right kidney was almost entirely occupied by a large abscess full of pus of the most offensive character. There had been a spontaneous rupture of this abscess, and the quantity of pus found before the kidney was reached, was so large that it appeared as if coming from a large psoas abscess. But upon extracting the pus by a sponge, and cleansing the cavity, it was found not to extend into that muscle, but only to the cellular structure in the neighborhood of the right kidney, which was in the condition above described.

Chemical Changes in the Composition of the Urine.—The alkaline urinary fermentation sometimes occurs, says Lehmann, even before the completion of the acid fermentation, and even within the bladder. The conditions which favor it are: 1. A temperature exceeding 68° Fah. 2. Presence of a sediment in unclean vessels. It occurs almost at once when mixed with urine that has become alkaline, even when the quantity added is *so small as hardly to saturate the free acid of the fresh urine*. We may, therefore, conclude that here, as in other kinds of fermentation, there is a *special alkaline ferment* present, which, as we believe with Scherer, "can only be sought in the *changed urinary mucus*, and in the microscopical organism contained in it." It would seem, then, that these chemists conceive of the mucus as furnishing two kinds of ferments, one producing the acid fermentation in normal urine; the other the alkaline fermentation in morbid urine. "We have found," says he, "that an alkaline urine which effervesces with acids, is most constantly and distinctly observable in primary or secondary affections of the mucous membrane of the bladder." In the primary affections there is either inveterate vesical catarrh or complete suppuration of the walls of the bladder. In these cases the secretion of mucus is abnormal; the mucus juice which is secreted in augmented quantity, *possessing none of the ordinary properties of urinary mucus*,* and being decomposed with extraordinary rapidity.

In secondary affections the vesical mucous membrane suffers only indirectly, as for instance, in affections of the spinal cord, when, if it retains its integrity, its mucus, which adheres to it on account of the deficient contractility of the bladder, becomes decomposed by remaining beyond the usual time in the bladder, and to such a degree as to induce alkaline fermentation at once in the urine as it drops from the ureters. Catarrh of the bladder then supervenes from the irritation of the ammoniacal urine. According to the views of Scherer, calculus would be essentially a disease, or the consequence of disease of the bladder, itself depending solely on the character of the vesical mucus and the nature of the fermentative process induced by it, whether it shall consist of uric acid, earthy phosphates or urate of ammonia, and

* It will be remembered that the idea of mucus being the cause of the normal acid by fermentation is accepted by these authors.

the different composition of its successive layers, equally depends on the changes in the secretion of the diseased mucous membrane. Lehmann adopts this view, modified by the admission of a controlling cause in the renal secretion. He remarks that calculi generally contain a clot of mucus, the innermost layers invariably containing uric acid, and being often entirely formed of it, that every uric acid concretion irritates the mucous membrane, and thus excites to the deposition of the phosphates, or of water of ammonia and lime.

Mucus considered as a Ferment.—The white sediment deposited in urinals is mucus or mucine mixed with the triple phosphates, urate of ammonia, perhaps carbonate of lime, and certain infusoria. Added to fresh normal urine, in the proper proportion of one part to fifty, it will render it ammoniacal within twenty-four hours.

Mucine or mucocine, the ferment principle of mucus, may be secreted by the ureters, or even higher, and by admixture with morbid mucous secretions and obstruction in its course, the urine may be alkaline as it falls into the bladder. The *alkaline fermentation* coincides with the decomposition of urea. Urine boiled for some hours becomes alkaline. Sanguinolent urine is alkaline from the normal alkalinity of the blood.

A vegetable diet, and especially certain acid fruits, the apple, the lemon, render the urine presently alkaline during some hours, but not ammoniacal. The normal varieties of alkaline urines have no putrescent odor. They have not the natural aromatic odor of healthy acid urine but a faint broth-like smell; their alkalescence is due to fixed alkalis and alkaline carbonates.

Urine containing mucus in quantity becomes rapidly alkaline and putrescent with evolution of ammonia and deposit of its earthy salts. Dumas had suggested that the vesical mucus undergoing a putrescent change might act as a ferment inducing the metamorphosis of urea into carbonate of ammonia just as yeast aids the conversion of sugar into alcohol.

Dr. Snow has proved that a few drops of stale urine left in the bottom of a vessel will always render fresh urine, dropping into it at the temperature of 100°, alkaline within six or eight hours, while it is always acid at the same temperature in a clean vessel. This is an image of what occurs when any obstacle exists to the complete evacuation of the bladder. If any urine remain, it will certainly be that which is already surcharged with mucus in the fundus vesicæ or in the hernical sacs which may exist, or around the foreign body which may obstruct its passage. This residue, if it be not already ammoniacal, will rapidly become so, and induce the same fermentation in the fresh urine as it drops from the ureters.

Ammoniacal urine is an irritant to the vesical mucous membrane;

it causes, therefore, a hyper-secretion of mucus which, indeed, partially protects the coats of the bladder from its irritation; but, on the other hand, operating as a ferment upon the urine, determines the evolution of more ammonia; here is already one vicious circle. But the irritation continuing, pus is added to the mucus, and the carbonate of ammonia changes this muco-pus into a viscid rope mass, which offers formidable obstruction to the complete evacuation of the bladder. Hence, no improvement can be expected unless the bladder be cleansed by daily injections of warm water. Pus is coagulated as well by the fixed alkalis as by carbonate of ammonia.

The part which mucus plays in rendering urine ammonical is perfectly established, and all observers are agreed about it. But Scherer assumes from these facts that the vesical mucous membrane may also acquire a condition within the bladder by which it predisposes the extractive matter to the formation of acid. This must undoubtedly be admitted to exist, says Lehmann, when an acid urine is secreted with preformed crystals of uric acid. Just the case, on the contrary, when there can be no possible need to suppose the intervention of any ferment.

Indirect Causes of Calculous Deposits by Retention of Urine favoring the Decomposing Action of Mucus and Ammonia—Dynamic or Adynamic.—Rheumatic or other spasmotic state of the sphincter and neck of the bladder. Paralysis of the bladder from injuries of the spine; of the brain; in dystocia, from renal disease; dyspepsia (with pyrosis*); mechanical obstruction by strictures of the urethra, by prostatic engorgement, by presence of foreign bodies in the bladder, or of calculous deposit in the bladder, ureters, or kidneys. Degenerescence of tissues, by fungous growths. Obstruction by pressure of cancerous or other tumors on any portion of the urinary ducts.

PATHOLOGY.—*Mucus in Relation to Calculus.*—Mr. Curling has particularly insisted on the influence which diseased conditions of the mucous membranes exert in determining the alkalinity of urine within the bladder. The cases in which we habitually observe alkalinity, connected with putrescence, or in other words, with ammoniacal urine, are, in fact, all of them either sources or sequences of inflammatory change in the mucous membrane of the urinary passages, among which urethral strictures and prostatic engorgement play a very conspicuous part. The measures employed to relieve or remove them, consisting chiefly in the introduction of foreign bodies, catheters, &c., into the bladder, contribute not a little to maintain the putrescent fermentation of the urine.

* The acidity of urine bears generally an inverse proportion to the secretion of acids by the stomach.

Mucus in excess, and indicative of local irritations, is more *viscid* than in normal urine, and *will not re-dissolve by agitation* nor become diffused through the mass like the *pus* with which it is often associated *as long as the urine remains slightly acid*. In chronic cystitis or cystorrhœa it ropes, often entangling large air-bubbles.

Mucus may become opaque by admixture with a sediment of the earthy phosphates, without the presence of pus, from which, in this case, the microscope may be needed in order to distinguish it. Any obstruction to the passage of urine, especially urethral strictures, which have propagated an irritative change upward and backward from the original lesion to the prostatic mucous membrane and neck of the bladder, is liable to occasion chronic hyper-secretions of mucus and muco-pus.

Chemical Characters of Mucus.—Stecker's analysis of mucus gives:

Carbon,	52.1.....	52.1%	Scherer, 1853 as cited by Lehmann
Hydrogen,	7.0.....	6.97%	
Nitrogen,	12.5.....	12.82%	
Oxygen,	28.4.....	28.11%	
<hr/>			100.0.....100%

Of white ash, alkaline carbonates, and phosphate of lime, 4.114.

The mucus deposit in urine is generally alkaline or soon becomes so; and even while the supernatant urine is still acid, the mucus will restore the blue color of faintly-reddened litmus paper. The alkalinity of mucus, and its aptitude to undergo and induce putrefactive fermentation, is increased by the influence of inflammation on the surfaces which secrete it.

Mucus in Urine.—The proportion of mucus in normal urine for the 1000 parts is stated by Berzelius as 0.31, (the whole solid residue, 67.)

Lehmann, with solid residue,

62.318 found mucus 0.112
65.998 found mucus 0.101
67.981 found mucus 0.110

Golding Bird found mucus in proportion of three parts out of one hundred and fifteen solid parts; but he does not state the proportion of water. Considerable variations exist without exceeding the normal limits.

More mucus appears in the urine of the night than of the day, more in concentrated than in dilute urine. Its quantity is doubled by the irritation of very acid urine on the mucous surfaces. Certain ingesta, viz., benzoic acid, may cause this hyper-secretion of mucus or the acids of the dyspeptic stomach. Golding Bird observed a case connected with scirrhous duodenum.

* Pus has a neutral or acid reaction and is slow to putrefactive changes.

Large quantities of muriatic, of lactic, and other acids, are liable to be secreted in morbid states of the digestive system, and to be excreted through the kidneys; the organs which receive an acrid urine, on its passage endeavor to protect themselves against its irritation by throwing out mucus. On the same principle are explained the accumulations of viscid mucus that imbed foreign bodies, calculi, &c., maintaining a permanent irritation of the bladder.

Mucous Urines.—Normal Apparances.—At rest in a tall, slender glass, the mucus of urine is barely visible as a light-grayish cloud, easily diffused by agitation without rendering the mass turbid. Urine may be clear, however, without being normal.

Mixed with the mucus, near the bottom of the glass, is occasionally found some epithelium, chiefly from the bladder and *urethra*.

Laudré Beauvais (*Sémioptique des Urines*) distinguishes two clouds, one of superior suspension, below the surface; the other inferior, about the lower third of the column, called the eueorema. The persistence of the upper cloud during several days has been regarded as of evil omen in acute diseases, menacing spasms, delirium, &c. The humoral pathologists argued that the organism was unable to effect the coction of its peccant humors, on the occurrence of which the urine deposits sediments, and both the mucus suspended above and that of the eueorema subside to the bottom.

Bence Jones found the urine remaining clear and acid in delirium during forty days after being passed, and even longer, refusing to undergo at all that series of decompositions to which normal urine is subject, and which mucus accelerates. Question as the mucus contained in this urine, its character, and quantity.

The cloud of mucus in normal urine may be separated by filtering, and remains on the filter paper of fine textures in a thin, varnish-like layer.

The cloud of mucus, though in excess, leaves the edges nearly transparent as it settles towards the bottom; pus, besides its deposit, renders the whole of the urine somewhat opaque; it is generally mixed with altered rope-mucus when diseased.

The urethral mucous membrane, mostly columnar, has the *squamous epithelium* towards the orifice, the deeper cells of which are elongated as in the bladder.

The urethra also contains *racemose glandules like those of the bladder*, though somewhat larger and more closely grouped. The vaginal epithelium consists of large pavementous cells. It is evident that the appearance of the epithelial cells found in association with mucus in the urine may furnish an important indication as to the part of the urinary organs which is the seat of the disease; especially when we know that the secretion of urine normally occurs without for-

mation or dissolution of cells, so that epithelium is rare in healthy urine, and what little is found is chiefly from the bladder and *urethra*. I have known Mr. Robin make his diagnostic between urethral blennorrhœa and vesical catarrh simply by the microscopic inspection of the mucus in urine. In inflammations, haemorrhages, exudations, fatty kidney, we find, says Kolliker, pus corpuscles, oil-drops, blood-globules, blood-fibrinous coagula moulded in the tubuli uriniferi in the forms of cylindrieal casts, and epithelium from the tubuli isolated or in continuous strings or tubes. (*Dr. M. E. Lazarus.*)

The particles of pus present under the microscope similar appearances to those of mucus, but are more numerous and more granular, with young pus-cells growing within the old ones and globules constantly found, while in mucus there are none.

The mucous membrane of the pelvis of the kidney (represented in *Kolliker's Microscopical Anatomy*, Am. ed., p. 606), has the *irregular epithelium* cells of very unequal size, some of which have nucleated corpuscles interiorly.

The ureters have laminated epithelium, the most deeply-seated cells rounded and small, the middle cylindrical or conical, 0.01–0.02 of a line in size, and the superficial rounded polygonal scales 0.006–0.04 of a line in size or more, flattened and reaching a diameter of 0.02. The frequent occurrence of *two nuclei* in these cells is a striking fact, as well as of *clear darkish-colored round granules* 0.001–0.002 of a line in size, which often assume the aspect of nuclei.

The mucous membrane of the bladder has also a *laminated or scaly epithelium*, 0.03–0.05 of a line thick, whose deeper elements are usually fusiform, conical, or cylindrical; the more superficial rounded, polygonal, or flattened, the cells differing like those of the pelvis and ureters remarkably in size. Stellate and dentate forms are produced by depressions of various depth on the under surface of the uppermost cells to receive the ends of the deeper elongated cells.

The lining of the neck of the bladder and towards the fundus is furnished with simple pyriform follicles, grouped sometimes in simple racemose glands from 0.02 to 0.24 of a line in size, having orifices 0.02 to 0.05, a *cylindrical or columnar epithelium*, and contain clear mucus, when healthy whitish.

All normal urine without sediment at a mean temperature undergoes an *acid fermentation* under the influence of the mucus contained in it (says Kolliker), and whilst fermentation and filamentary fungi are developed. It forms from the decomposition of the urinary coloring-matter, lactic, or acetic acid, in consequence of which a corresponding proportion of uric-acid is set free from its soluble compounds with ammonia and the alkaline earthy bases, and deposited in the form of rhombic or prismatic crystals, colored yellowish or reddish by the coloring-mat-

ter of the urine. Sooner or later the acid disappears, and from the decomposition of the *urea*, perhaps also of the coloring-matter, for the color pales, the urine becomes ammoniacal and alkaline, with large, colorless, pyramidal prisms or needles grouped in a stellate fashion, and soluble in acetic-acid, or the triple phosphate of magnesia and ammonia which, intermixed with numerous infusoria (vibriones and monades), form a superficial pellicle of greasy and vari-colored refraction of light, and with granules of urate of ammonia, and it may be carbonate of lime, a white sediment.

Acid Urinary Fermentation.—The different kinds of urine vary solely in respect to the rapidity with which any one kind of morbid or normal urine undergoes acid fermentation sooner than another, and thus gives rise to the formation of the insoluble sediments of uric acid. Every normal non-sedimentary urine when exposed to the ordinary atmospheric temperature, begins, after a longer or shorter time, to separate uric-acid, and to exert a stronger reaction on litmus paper.

The increase of free acid in the urine is also demonstrated by the volumetric method, which corresponds to the akali-metric.

Faintly alkaline-urine, such as is passed after vegetable food rich in alkalis, or after several doses of Acetate or Tartrate of Potash, acquires, after a short time, an acid reaction which increases so much under favorable conditions that any turbidity which may have arisen from the separation of earthy phosphates disappears, and crystals of uric-acid are separated.

Scherer, and subsequently many other observers, have noticed that jaundiced, brownish-yellow, faintly-acid urine becomes strongly acid, and that in place of this color it assumes a green tint, owing to the peculiar action of the free acid on the bile pigment.

The acid fermentation of the urine continues to increase, according to Scherer, for four or five days. Lehmann, in a temperature of from 50° to 60° (Fahrenheit), has seen the acid of the urine increase for two or three weeks, and then not disappear for six or eight weeks. Both he and Liebig have observed the presence of acetic-acid as well as lactic-acid, on which Scherer insists. Acid-earthly phosphates, remarks Lehmann, must be present whenever lactic or hippuric-acid constitutes the acidifying principle of the urine.

Scherer (*Untersuch.*, S. 1—17) was the first who recognized and attentively followed this process of acid-urinary fermentation. He attributed it to the mucus of the bladder, acting as a ferment upon the extractive pigment which it metamorphoses into lactic-acid.

Lehmann suggests that the acid thus formed may extract an equivalent of base from the simple urate of soda, and thus give rise to the

formation of the urate of which the ordinary sediment of acid urine consists.

The neutral muriate of soda $\text{Na O. C}_8\text{H N}_2\text{O}_3 + \text{HO}$ crystallizes in wart-like masses, dissolves in 80 or 90 parts of boiling water, is slightly soluble in alcohol, and insoluble in ether; at 100° it loses its water of crystallization.

Biurate of Soda, $\text{Na O. C}_8\text{H N}_2\text{O}_3 + \text{H O C}_8\text{H N}_2\text{O}_3 + \text{HO}$, crystallizes in short hexagonal prisms or in thick six-sided (microscopic) tablets, which commonly arrange themselves in star-formed masses, the individual crystals of which are larger and can be more distinctly made out than in the microscopic aggregations of the ammonia salt. It begins to lose its water of crystallization at 170° , and is soluble in 124 parts of boiling and 1150 parts of cold water.

The acid fermentation of the urine, says Lehmann, may be impeded or interrupted by most of the conditions which in other cases obstruct fermentation, as for instance, by the addition of a little alcohol; by boiling the urine, (when the formation of an acid is retarded for a prolonged period;) and finally by removing the mucus by filtration, of which the influence is obvious from the fact that a species of fermentation globules or yeast fungi are generated in and from the mucus during the process of acid fermentation. These fungi are filamentous, similar to the mycoderma cerevisiae, only smaller, ($\frac{1}{100}$ to $\frac{1}{1000}$) having a spherical rather than oblong shape, and a distinct, eccentric, round nucleus. When the urine begins to lose its acid reaction, they appear upon its surface and probably contribute towards the formation of the membrane which covers it. They are followed by conervae and algæ, which co-exist with them while the urine has still an acid reaction, and afterwards while it becomes neutral and finally alkaline. When innumerable vibrios and monads in addition to vegetable products, in whitish-gray membranes, coincide with the ammoniacal and putrid stench.

Chemical Examination of Mucus.—Under the addition of a few drops of acetic acid, the cloud of mucus in normal urine condenses into viscid flakes like a thin semi-opaque corrugated membrane, redissolving in concentrated acid with the aid of heat. This test suffices also in morbid urines to distinguish mucus from pus. Boiled with concentrated acetic acid mucus is copiously precipitated from solution by Ferro-cyanide of Potassium. Dilute tincture of Iodine precipitates and colors mucus.

Alcohol coagulates mucus and precipitates mucine from the fluid in flakes and threads. The dilute mineral acids determine precipitates, easily soluble in excess of acid. Strong nitric acid, if hot, colors mucus yellow. Heated with hydrochloric acid, and exposed to the air, it turns blue. Gallic Acid and Basic Acetate of Lead precipitate

solutions of mucus, while neutral Acetate of Lead, Bichloride of Mercury, and Sulphate of Alumina render them only turbid.

Mucus does not coagulate like albumen by heat and nitric acid (Pus always contains albumen in quantity, and therefore does coagulate.) Agitated with ether, mucus gives up but mere traces of fat (Pus yields oil-globules, yellow, like butter on solution in ether and evaporation of the ether.)

Mucus dissolves readily in dilute alkalies, more slowly in concentrated solutions. Pus, by the addition of liquor Potassae in equal quantity, forms a dense translucent gelatinous mass adherent to the test tube. Mucine, according to Lehmann, is also capable of being gelatinized in strong alkaline solutions, and is then rendered denser and opaque by addition of water. Pus is also coagulated by Carbonate of Ammonia, which is set free in urine by the action of mucus at the temperature of the body, and still more rapidly under free access of air.

Mucine has never yet been completely separated (*Lehmann in second edition*) from molecular granules, intestinal and cellular formations, vibriones, *microscopic fungoid growths*, nor from other chemical matters, organic or inorganic. Different mucous juices behave differently towards individual solvents and reagents.

Scherer has observed occasionally a mucus which, contrary to the general behavior of this substance, dissolves in water, and may be separated by filtration from the morphological substances.

The analysis given page 779 is of mucus thus obtained, and taken from a sac between the trachea and œsophagus, probably an abnormally dilated bursa mucosa. This mucine was precipitated from aqueous solution with alcohol, and repeatedly boiled in alcohol and ether.

Julius Vogel finds albumen in varying quantity in the mucus secreted when catarrhal inflammation exists.

Virchow and Rokitansky find albumen with the mucous fluid of colloid cysts, and Tilamus with that of the synovia.

Lehmann does admit the identity of mucine with *pyine*.

CALCULI.—Principles of Diagnosis.—Let us distinguish here a pathology exclusively medical, and therapeutics exclusively prophylactic, from the surgical pathology of calculi already formed, the discernment of their nature in view of the mode of operation to be preferred, and the details pertaining to operative surgery.

Signs drawn from the Different Kinds of Pain.—Here we have to distinguish the pains characteristic of the descent of renal calculi previous to the symptoms of vesical irritation which they afterwards determine, and the pains of vesical calculi as compared with those experienced in other diseases of the bladder.

Urolithes or caleuli in general may co-exist with albuminuric granulations of the kidney, hypertrophy of the kidney, with saccharrhea, obliteration or obstruction of any portion of the urinary passages, either above or below the bladder; sacculated bladder or hernia of the mucous membrane; hypertrophy or atrophy, contraction or dilatation, congestion, inflammation or ulceration of the vesical tissues, abscesses and cysts; muco-pus, blood, and all the products of their alteration, and gouty concretions in the joints, very frequently. From the preceding considerations it results that when in view of the solution or prevention of calculous deposit, diuretic indications exist, the urine will be increased by those agents which specifically tend to augment and modify the renal secretion, only on condition of removing any *a priori* obstructions in the liver and portal system (indicated by presence of purpurine in the urine), or in the action of the heart and great vessels (dilatation, contracted mitral orifice, &c.) In the last case, and dropsical effusion thereon consequent, G. Bird attaches high value to the Tr.-ferri-sesquichloridi M. xv., with Infusi-Digitalis zij, every five or six hours, the bowels being kept freely acting. The indication pursued was to combine with an arterial sedative a haematomic agent. It is perfectly physiological to diminish the velocity, while improving the quality of the blood by whatever agencies this result be obtained. Normal proportion in urine, .001, increased by animal diet from 1.1 gr. to 1.4. Diminished by vegetable diet from from 1.1 to 1.00 ; less influenced than urea by food. Fourcroy found more in winter than summer. Schultens, in the cool, damp climate of Holland, .21 to .67. Lithiasis unknown in the tropics. Lehmann did not find the uric-acid reduced in the summer during continuous perspiration. It is increased either together with the other solids of the urine, or at their expense in cases of indigestion, especially when food or spirituous liquors not spiced were taken shortly before bed time. Augmentation, but not necessarily deposit of uric-acid, occurs in fevers. The sediment from acid urine in fever and febrile diseases generally, is Urate of Soda, with very small quantities of the Urates of Lime and Ammonia. It dissolves (the Urate of Soda) at 50° ; then urine made turbid by it clears. There is no such thing as a well-defined Uric-acid diathesis cognizable, like the syphilitic for instance, by regular series of symptoms, but the deposition of Uric-acid is sometimes known only by the local irritation it produces, and however constantly an attendant on gout, is observed in various morbid states having little or nothing else in common with each other, and which have proved amenable to the therapeutic measures differing as widely.

There is for example no uniform system of diet to be recommended, although the physiological indication to avoid much flesh and wine, is to be observed in the absence of special reasons of exception.

It is especially during childhood that the urethra manifests great sensitiveness to the contact of Uric-acid crystals, with frequent desire to urinate, passage of very small quantities, and sometimes wetting the bed at night, and evident uneasiness.

Uric-acid crystals are found in the calices of the kidney as well as in the bladder, when, in consequence of morbid changes, atrophic, cancerous, &c., which have diminished the contractile power of the pelvis of the kidneys and sacs of the infundibula, they are unable completely to expel their contents. This condition is only found in later life.

Its presence in fresh urine is very rare, and denotes some extremely severe morbid process. It is after urine has been exposed to the air for an hour that Uric-acid crystals often begin to appear. It nominally exists in the blood of men, dogs, frogs, &c. It is increased in the blood invariably during arthritis, and often in Bright's disease, but not in acute articular rheumatism. Scherer found it as a normal constituent in the juice of the spleen. Mr. Henry Gray repeated his experiments without success. Bence Jones finds healthy urine to retain its acid reaction until the eleventh day; and, if separated from its mucus by *very fine filtering paper*, until the 15th day, after which it becomes alkaline. He does not state the temperature, which was no doubt moderate (*London*), but on which the time occupied in fermentative change mainly depends. It is the more important that this element of the calculation should be accurately observed, because it is a diagnostic character in various diseases. B. Jones found the urine in fever become neutral in twenty-four hours, while in severe delirium it remained acid forty-two days, and in other cases the alkaline decomposition never occurred at all.

Tests of the Relative amounts of Acidity and Alkalinity in the Urine.—B. Jones.—A long graduated tube, accurately divided into 100 measures, 144 of which would dissolve in distilled water, 12 grains of dessicated pure carbonate of soda, $\frac{1}{2}$ gr. $\times 100 = 8\frac{1}{2}$ gr. to the 100 measure test glass. One thousand grains of urine (a known weight,) is heated to 130° , kept so, and stirred while the test solution is dropped in until the reaction on test paper shows the neutral point. The number of measures is then observed. In order to apply this test to the alkalinity of urine, prepare another test solution containing so much dilute sulphuric-acid that each measure shall neutralize one of the test alkaline solution. (See *Philos. Trans.*, p. 49, Part II.)

Alkaline urine from the ingestion of vegetable salts decomposed in the system. Tartrate or citrate of potash or soda. Wöhler has shown that the neutral salts formed by the combination of the alkalies with vegetable acids are oxydized in the animal organism, in precisely the same manner as if they were burned in oxygen gas; alkaline carbo-

nates pass into the urine and render it alkaline, it consequently becomes turbid from the separation of earthy phosphates and naturally effervesces with acids.

The alkaline carbonate appears in the urine often very quickly, but both the time and the quantity requisite to render the urine alkaline vary widely among individuals. Lehmann observed that half a scruple of acetate of soda generally sufficed for persons living on a mixed diet, while two drachms never succeeded in rendering alkaline the urine of vegetarians. Active exercise and purgation both prevented alkalinity of the urine.

The acids or alkalis of the urine being derived directly from the blood, it follows that the alkalinity of the blood will be greatest just before the first alkaline urine is secreted; hence at meal-times, when this increased alkalinity is accounted for by the separation from it of the gastric acids, and will be greatest when animal food is used, because this requires acids for its digestion, and the acids at any given moment, will naturally be least in the urine when they are most in the stomach, because both are drawn from the same fountain, the blood. In certain irritable dyspepsias, a large excess of acid is secreted by the stomach and is presently separated by the kidneys from the blood into which the acid chyle has passed. It is also not impossible that such dyspepsias may originate in an acid constitution of the blood which may determine simultaneously the separation of acids by the gastric mucous membrane, and by the kidneys, often becoming alkaline while the largest secretion of acid was made in the stomach.

With vegetable food acidity was marked during digestion, but greatest before meals.

The sub-acid fruits—apples, strawberries, currants—after eating baked plums (*Wöhler*) and other fruits containing ortrates or malates, the urine became alkaline. (*G. Bird*.) Tartaric-acid increases the normal acidity of the urine considerably, hence the effect of the acid, wines and beers. Exercise did not appear to affect materially the quantity of uric-acid excreted.

In dyspepsias characterized by pyrosis, large quantities of acids, hydro-chloric, lactic, &c., were secreted and finding their way to the kidney, then determine the precipitation of uric-acid from the urine. This is liable to occur very frequently, and coincides with the very large proportion of calculi, of which uric-acid is the nucleus or a chief constituent.

Triple Phosphate occur either in granular amorphous deposit or in three-sided crystals with bevelled ends, distinct from the irregular rounded shapes of the urates under the microscope.

Phosphate of lime is rarely crystalline. Chemical tests suffice to distinguish these earthy salts, which, oppositely to the urates, dissolve

in acid and deposit in alkaline urines. They are never found together. (*Barclay.*) The triple phosphates are found not exclusively in decomposed ammoniacal urines, but also in conditions of depressed vitality. Visible deposit of the phosphates only proves that the urine is alkaline, only the quantitative analysis can inform us whether there be excess of phosphoric-acid. Besides the transient alkalinity of dietetic origin and the decomposition of urine it may be alkaline from secretion of ammonia by the kidneys. This has been called the phosphatic diathesis, and belongs to states of vital depression.

The transient alkalinity by fixed alkalis is often dependent on acid dyspepsia, and feeble stomachs give the greatest variations of acidity and alkalinity during digestion. Deposits of earthy phosphates in the urine correspond with alkalinity.

There is only one questionable case in which a deposit of phosphate of magnesia is compatible with an acid reaction from the presence of chloride of ammonium, the former being nearly insoluble with the latter, which does not, however, oppose the solution of phosphate of lime.

It is to be considered in examinations of urine where pellicles of phosphates are found in one stratum, that this stratum, whether the superficial, rendered alkaline by the air, or the underlying, consequent on the superposition of acid urine of less density is to be separately examined. It will always be found alkaline if it contain a deposit of phosphates.

These deposits have no tendency to spontaneous cohesion and cannot form calculi without the presence of mucus, blood, pus, or some foreign substance as a nucleus and irritant of the bladder.

This condition co-existing with alkaline urine, the phosphate of lime is deposited identically, whether the alkalinity depend on ammonia resulting from the decomposition of urea in the urinary cavities or on fixed alkalies drawn from the blood, either with or without morbid changes. The phosphate of magnesia differs in its composition according as its deposit has been made for the fixed alkalis, or has been effected under the influence of ammonia. In the latter case, it takes up one equivalent of ammonia and water of crystallization, forming the ammonio-magnesian phosphate.

If the precipitate of earthy phosphates be entirely amorphous, the alkali causing it is not ammonia, which determines crystals of the triple phosphate. Crystals of the ammonio-magnesian, or triple phosphate are insoluble in water, and present a peculiar glistening glass-like lustre.

Crystallographic characters—(*Thudicum*, p. 206.) Before the blow-pipe the triple phosphate gives off the smell of ammonia, swells up, gradually becomes gray, and ultimately fuses, leaving a mixture of phosphate of lime (*Th. 205.*) and pyro-phosphate of magnesia. (*Th. 200.*)

A series of experiments were made, says Lehmann in his laboratory by R. Buckheim of Dorpat, among others, with the view of determining the quantities of alkaline carbonates, tartrates, citrates, &c., which are necessary to destroy the free acid of the urine, and farther, to ascertain the quantities of free tartaric and citric-acid which must be taken at one time to allow of a portion remaining unchanged in the urine, but notwithstanding every attention to the quality and quantity of the food taken during equal intervals of time, the bodily exercise and other physiological relations, these observations have failed in leading us to any sharply-defined numerical results.

An infinite quantity of organic acids and carbo-hydrates may be reduced by one and the same quantity of alkaline carbonates into carbonic-acid and water, for scarcely is an alkaline carbonate decomposed by a substance of this kind and deprived of its carbonic-acid before it is reconverted into a carbonate by the combustion of the organic substance.

The rapidity with which properly adjusted doses of saline bodies reach the urine varies from many causes, but chiefly from the influence of the ingesta, and is greatest when fasting, the digestive functions being normal and the assimilative powers in fair vigor.

Mr. Erichsen's experiments on a case of congenital extroversion of the bladder in a lad, (139,) healthy, give considerable variations in the time required by the alkaline citrates and tartrates for appearing as carbonates in the urine. He states:

Time since last meal.	Salt given.	Time elapsing before alkalinity of urine.
3½ hours,	Citrate of Soda,	28 minutes.
5 hours,	Citrate of Potass.,	40 minutes.
12 hours,	Tartrate of Soda,	34 minutes.
2 hours,	Tartrate of Soda,	47 minutes.

In the first two experiments the urine remained alkaline for several days after the administration of the salts.

In Mr. B. Jones' experiments, the urine which became alkaline during the digestion of animal food, and neutral after pure vegetable food, rendered but slightly less alkaline during digestion by nine drachms of dilute Sulphuric-acid in three days and not more acid before meals. Tartaric-acid in large doses, 354 grains in three days, considerably increased the acidity, but without rendering the effect of digestion on the reactions of urine less apparent than when no acid was taken. Liquor Potassæ in large doses diminished the acidity without rendering the urine constantly alkaline, and its effect was soon dissipated.

The Acetate or Tartrate of Potash, or other bodies intended to reach the kidneys, can act only if absorbed, and can be absorbed only if largely diluted. Otherwise these and other salts are shown by the

experiments of Poisseuille, Bernard, and others, to purge by determining exosmose of serum on the intestinal passage. The same effect results from morbid irritability of the gastro-intestinal mucous membrane as in cholera.

The alkaline reaction of the urine disappears in proportion as substances causing it are removed from the body; hence, as a general rule, it continues the least time after those have been taken which are most easily soluble. After taking two drachms of Acetate of Potash it has continued only ten hours, after three drachms of Bicarbonate of Soda, it remained alkaline for three days. The same differences may be, however, observed between individuals who have taken the same salt in the same quantity.

B. Jones found one hundred and twenty grains of pure dry Tartrate of Potash, dissolved in $\frac{3}{4}$ iv. aq. destil, make the urine alkaline in thirty-five minutes; the alkalescence had disappeared in two hours, but reappeared after the next meal. Twenty-four hours after a much larger quantity, 10 ounces of the Tartrate, taken during three days, modified little, if at all, the acidity of the urine.

Urea, $U = C_2 H_4 N_2 O_2$, is the chief product of metamorphosed nitrogenous food, incapable of higher oxydation, and excreted by the kidneys in order to prevent its topical accumulation in the blood.

It is formed artificially from the decomposition of uric-acid by oxidizing agents, such as peroxyde of lead, or by the evaporation of Cyanic-acid mixed with Ammonia, or from the decomposition of Creatine, which is the juice of flesh, $C_8 H_{10} N_3 O_4 + 2 Aq.$

It yields in decomposition when fused with Potash, or treated with concentrated Sulphuric-acid, or heated in the presence of water, Carbonic-acid, and Ammonia, $C_2 H_4 N_2 O_2 + 2HO = 2CO_2 + 2NH_3$.

It gives the measure of disassimilation or of the most important changes of tissue in the system; more is produced during the waking hours than when asleep, more during exercise than at rest, and more in fever than in the normal state.

It is subject to decomposition in the bladder by retention and the ferment of mucus or muco-pus, and then its ammonia combines with the acid urates in precipitation. The ammonia normally present in urine previous to the decomposition of urea is never sufficient to render it alkaline. Normal urine does not become alkaline within twenty-four hours after emission. Heat and dilution favor the alkaline fermentation, while urine, rich in urea but abounding also in acids, like the urine of fever, will, if decanted clear from its deposits, retain its normal aspect and acidity during several days.

Within the bladder urine incysted, or sacculated, or filling the pores of foreign bodies, and retained in these or other circumstances, as in vesical paralysis, or spasm of the neck of the bladder, undergoes

the alkaline fermentation, and continues to act as a ferment on all urine subsequently entering the bladder. This Dr. Snow has experimentally demonstrated. There are two kinds of alkalinity of which urine is susceptible. The precipitated, depending on a volatile alkali, is distinguished by the reddening, as it dries, of violet test paper, which had turned blue on being wet with alkaline urine. If fixed alkalies be present, the paper will remain blue. Either will effervesce with acids or lather if albumen be present. Fixed alkalies do not render the urine turbid or stinking like the other. Ammoniacal urine is an irritant that ulcerates any mucous surface on which it lies. Calculi not unfrequently cause no suffering unless attended with this complication.

Hence the necessity of closely watching cases in which any predisposition to retention exists. Besides those which are organic, social etiquette, and an idiosyncrasy of the insane often determine retention.

The presence of volatile alkalies in the urine is always pathological, but that of fixed alkalies may fall within the range of perfect health. Many of the acid fruits, especially lemons and apples, whose digested juices are, by an increment of oxygen, converted into the carbonates of their respective bases, give the urine promptly an alkaline reaction during a few hours. This does no harm, but if the alkalinity be constant it is generally associated with anæmia. Pale urine, which is apt to be alkaline, resulting from defective nutrition indicates a tonic treatment, with the discontinuance of alkaline medicines. The Phosphates of Lime, or of Lime and Magnesia, are the precipitates of the fixed alkalies, the Ammoniaco-magnesian Phosphate from the volatile.

The urates are deposited from saturated urine in the bladder, when its retention determines the absorption of its water. They may be redissolved by the ingestion or the injection of diluents. The nearly solid urine of serpents and birds is composed of the undiluted urates, and that of gouty subjects has been seen by Dr. Prout to resemble it.

The urates dissolve by heat in alkalies and are precipitated by acids. They occur either in the granular amorphous or crystalline form in acid and neutral urines. Their crystals are imperfect, in rounded masses, of refractive power so high as to have been mistaken for oil globules. These are frequently associated with uric-acid crystals, and may show an approach to the pathological states in which uric-acid is deposited.

The urates, when dependent on gastric derangement, are paler than when produced by some excess, pinkish—supposed to be connected with biliary derangement.

Urate of Ammonia found in brownish-black round clusters, studded with sharp needles, may be formed along with the white deposit of crystals of triple phosphate, *uric-acid* (?), infusoria, and fungi in urine

that has undergone the alkaline fermentation in long exposure to the air, was believed by G. Bird to be the sediment from febrile urine, which Lehmann and Heintz maintain is urate of soda chiefly. Uric-acid very seldom occurs as a sediment in fresh alkaline urine, even with paralysis, and never in other cases, then in white opaque granules appearing under the microscope as dark globules studded with acicular crystals.

Urate of Soda.—In gouty concretions, yellowish-white, soft masses speckled here and there with red spots, hardening on exposure to the air, exhibiting under the microscope beautiful tufts of crystals.

Urate of Soda in Gout.—Lehmann agrees with Garrod that there is a constant and marked diminution of uric-acid in the urine before the paroxysm in acute gout, and always in chronic gout with arthritic deposits, while in rheumatism, especially in acute articular rheumatism, the amount of uric-acid in the urine is very much increased.

Planes of refracted light cross the square surface of the oxalate crystals, diagonally, disappearing and re-appearing as the surface is altered.

It probably never composes by itself alone. Even the mulberry calculi, it is generally, if not always, associated with uric-acid, and these often constitute the nuclei of larger concretions.

It is especially observed in deranged states of health connected with deficient respiration and vicarious function of the kidneys, which eliminate carbonic-acid in the form of oxalic-acid. (*Draper.*)

It is not significant of either disease or perverted function of the kidneys. (*Barclay.*)

The component elements of vastly the greater number of all calculi exist in the normal urine. Their excess at any time may favor their deposit from solution, and their deposition may coincide with a calculous formation; but they may exceed their normal proportion without forming deposits in the urinary organs, and may be deposited without forming calculi. Let us examine in reversing this order the conditions,

1st. Of calculous formation in general, the determining causes.

2d. Of the deposit by the urine of its solids as accessory to formation and growth of calculi.

3d. Of the excess in the urine of particular constituents, to which, when habitual, the term diathesis has been applied, thus we hear of the uric-acid diathesis, the phosphatic diathesis, &c., generalizations not entirely baseless, but often crude, hasty, and illusory, as analysis will prove.

"Calculi always contain in addition to the ingredients of which they mainly consist, more or less animal matter, such as dried blood, vesical mucus," &c. (*Boivin.*)

These constituents, which for the chemist are but trivial accessories,

are for the physician of the highest significance. Without their intervention, either mechanical or chemical, no calculus could be formed, because its materials would be evacuated either in an amorphous state or in minute crystals before aggregation could occur. Mucus and blood furnish the mortar that binds the particles of earths and the minute crystals in mass, as well as the ferments that cause deposition of the elements of calculi in the bladder, the prostate, the pelvis or ureters where they become in turn causes of farther obstruction, irritation, and more copious deposits.

The Acid Reactions of Urine.—Fresh normal urine of density 1.03 is acid, and distinctly reddens litmus paper, provided the diet be either mixed or animal. For exceptions, see page 787. On vegetable diet it is sometimes acid, sometimes alkaline.

The acidity of normal urine has been attributed by Berzelius* to the presence of lactic-acid. Lehmann admits this, as well as hippuric-acid in many analyses of fresh urine, either healthy or morbid, but attributes the chief acidifying part to the acid phosphate of soda. Common or tribasic phosphate of soda has the property of yielding to the weakest acids, for instance to uric-acid, one of the two atoms of its fixed base, and of being converted into an acid phosphate. (*Lehmann*, Vol. I., p. 395; *G. Bird*, 96.)

Heller has ascribed the acidity of fresh urine to the basic phosphate of soda. Liebig controverted this in favor of the acid-phosphate. This is the view to which Dr. Bence Jones also inclines.

Dr. G. Bird† recognizes with Prout the weight of chemical evidence in favor of the acid-urate of ammonia, though not to the exclusion of the acid-urate of soda, and shows the fallacy of M. Bequerel's objection. He then cites Liebig's researches showing the mode of formation of the *super-phosphate of soda* by heating uric-acid with a solution of the tribasic of phosphate. Finally, (§81,) he states experiments which lead him to the following deduction :

"Uric-acid, at the moment of separation from the blood, comes in contact with the double phosphate of soda and ammonia, derived from the food, forms urate of ammonia, evolving phosphoric-acid, which thus produces the natural acid reaction of urine. If the whole bulk of the urine be to the urate of ammonia formed not less than about 2.701 to 1, the secretion will, at the ordinary temperature of the air, remain clear; but if the bulk of fluid be less, an amorphous deposit of the urate will occur. On the other hand, if an excess of uric-acid be separated by the kidneys, it will act on the phosphate of soda of the double salt, and hence on cooling the urine will deposit a crystalline sediment of acid sand, very probably mixed with amorphous urate of

**Ann d. Ch. u. Pharm.* Bd. 50, § 161—196. † *Urinary Deposits*, §78 and 79.

ammonia, the latter usually forming a layer above the crystals which always sink to the bottom."

The point at issue mainly is, what is the form in which the precipitated elements exist at the moment of their disengagement from the blood. Allowing Mr. Bird's data of the ammonio-phosphate of soda and uric-acid, it is easy to mix them in solution out of the body and to show the evolution of phosphoric-acid with formation of the urate of ammonia, which in urine on cooling deposit with the coloring matter in the ordinary amorphous sediment; then if a fresh quantity of uric acid be heated in the supernatant fluid, more of the urate of ammonia will be deposited up to a certain point, when it will be succeeded by the urate of soda. This on cooling, deposits fine prismatic crystals of impure uric-acid due to a reaction with the free phosphoric-acid. They contain chemically combined some phosphate of soda, of which neither boiling water nor hydrochloric-acid can deprive them. In order then to account for the natural acidity of healthy urine, we have only to consider the 0.398 grs. of uric-acid (average quantity in 1000 grs. of urine) as dissolved with about 2.5 grs. of tribasic phosphate of soda, (proportion found by Simon in 1000 grs. of healthy urine.)

According to the experiments of Bence Jones, endorsed by G. Bird and Thudicum, and substantially coinciding with those of Vogel, who examined the quantities of free acid for every hour in the twenty-four, the greatest acidity was found during night, or while fasting, the lowest in the forenoon, three hours after breakfast or five or six hours after dinner. Immediately before each meal the urine was most acid, that passed during digestion is three or four times less acid, the difference greatest after a meal of animal food only.

Uric-acid Sediment consequent on the Acid-ferrocy.—The color of the Uric-acid sediment is, with few exceptions, yellow, like its microscopical crystals, but when the deposit is white it exhibits not only the crystals of triple phosphate, infusoria, and fungi, but also the brownish-black round clusters of Urate of Ammonia,* studded with sharp needles. The urine effervesces strongly with acids and then hardly exhibits any yellow color, the pigments being consequently for the most part destroyed.

Question, as to whether *normal* urine is acid or alkaline at the moment when the first crystals of urate of ammonia are found deposited?

Uric-acid is a normal ingredient of the blood and urine, in proportions varying from 0.02 to 1.0 grammme in the twenty-four hours. Becquerel says, average 8.1 grains. This increases in inflammatory and zymotic diseases. In chlorosis and pulmonary emphysema, Becquerel found it below the average, above in phthisis, and highest in icterus and milk fever.

* But Urate of Ammonia is snowy white. See Thudicum, p. 17.

For 35.0 grammes of urea secreted in twenty-four hours 0.5 grammes of uric-acid are discharged. Their fluctuations in disease are generally parallel. All causes that interfere with the secreting power of the kidney cause retention of uric-acid proportionally with that of the other constituents of urine. Thudicum observes an exception in scarlatinous albuminuria, where uric-acid has continued in excess while the urea had fallen to about half the normal average.

Physical Characters of Uric-acid Concretions.—Gravel from $\frac{1}{16}$ inch diameter and upwards, until too large to pass ureters or urethra, generally rough, especially if formed in the pelvis of the kidney, a pisiform variety is generated in great numbers, often in the pelvis of the kidney or in the ureters.

Internal texture, invariably crystallized and usually lamellated. Form more or less globular, surfaces sometimes flattened, or faceted, if formed in ureters. Color ranging through shades of yellow, reddish, and dark brown. Weight may reach that of six ounces or more.

Texture.—It generally forms from the urate of soda, in urine, after exposure to the atmosphere. Lehmann has never found it in fresh urine.

Chrystallography. See Schmidt. Entwurf. W. S., 28—34, for the complete analysis. *Lehmann*, Vol. 1, p. 191.

Uric-acid is always met with when occurring in the blood, arterial as well as venous, in the form of acid-urate of soda, lime, or ammonia, and retains the same form after passing the kidneys. Any urine deficient in water will deposit its excess of urates. Nearly a fourth of all calculi contain urates and 8.69 per cent. have urates as their nuclei. Urates are deposited either from excess or from alkaline decomposed urines, being less soluble in solution of carb.-ammonia than in fresh acid urines.

The contact of uric-acid crystals, even microscopical in size, suffices to cause spasm at the sphincter, even when the crystals were ovoid, much more when they are jagged. In elderly gouty subjects the urate of soda is sometimes copiously secreted, especially at night, as thick as mortar and plugs up the urethra.

Uric-acid Secretions—Sand and Gravel—Crystalline Sediments.—The common pulverulent deposit is composed of single crystals, the exception in which is to find crystals, twin, crossed and hanging together in a variety of ways. The term gravel applies to a zeolithic arrangement in which the crystals group with their predominant axis round a common centre, like the rays around the luminous body whence they emanate, one or two large crystals usually forming the basis of these globular masses. Viewed by transmitted light under the microscope, the globules are opaque and the superficial crystals of uric-acid of a dark brown, faintly transparent. To the naked eye the deposit is

of a brownish red. This is sometimes met with in the pale watery urine of early infancy.

Uric or Lithic Acid.— $C_{10} H_4 O_6 N_4 \cdot 4aq.$.—When pure is white, in irregular rhombic plates or light powder, of satiny lustre, without taste or smell, nearly insoluble in cold water, sparingly soluble in hot water, and not more in blood than in water. One part is dissolved in fourteen or fifteen thousand parts of water at 68 F. (20c.) and faintly reddens litmus paper. Soluble without decomposition in sulphuric-acid, and precipitated by water. Is easily dissolved in a solution of the common or tribasic phosphate of soda and of other alkaline salts, giving rise to the form of acid salts. Dissolved in dilute nitric-acid it gives alloxanthine, which, when ammonia is added to its warm solvent produces a purple reaction due to purpurate of ammonia or murexide. Heat decomposes without fusion, but with extrication of hydrocyanic acid.

Urate of Soda.—Amorphous and impalpable yellow sediment of Prout. The characteristic sediment in febrile diseases. (*Lehmann and Heintz.*) Uric-acid extracts soda from alkaline lactates and other salts of organic acids, forming acid salts which acidulate the previously neutral fluid. The urate of soda then separates from a pure mixture in a crystalline form, but from a solution like urine, containing extractive matter, in an amorphous state and redissolves at 50°. Its presence in the urine increases inversely to the pulmonary haematoisis and the sediment in that of animals deprived of normal exercise. It is found in pulmonary emphysema, in heart diseases, enlarged liver, &c., associated with obstructions to the circulation, of which haemorrhoids and gout are symptomatic. It is found in large masses only with the true granular liver.

Oxalate of Lime.—*Pathological History.*—The introduction of uric-acid into the organism by the *prima via*, or by the veins, was followed by the augmentation of urea and oxalate of lime in the urine. In fevers and other disturbances in the circulation and respiration, oxalate of lime and lactic-acid are increased along with uric-acid.

There are no acute and few chronic diseases, in which the oxidation of the constituents of the blood is not diminished or impeded, and there is no disease characterized by a too sudden or rapid oxidation of the blood.

The decomposition of uric-acid into urea and oxalic-acid, may be artificially effected by the peroxide of lead.*

In its formation, oxalite of lime exists, but seldom in a visible sediment, closely connected with the separation of uric-acid; the abun-

* Wöhler and Frerichs; Ann d. Ch. u. Pharm. Bd. 65, S 338-342.

dance of its crystals is proportional to the rapidity with which acid fermentation is induced, and the consequent early deposition of free uric-acid (elsewhere, which always forms the nucleus or enters into the composition of the nucleus of oxalate of lime calcali). Its urine, as well as that of free carbonic-acid, is increased by the use of drinks containing a large quantity of carbonic-acid. It is much increased by the ingestion of uric-acid urea is then also augmented by injection of the urates into the veins.

The microscope affords the only means of detecting with certainty the presence of oxalate of lime. (*Barclay.*) It generally occurs in octohedral crystals, to be distinguished from the very short square prisms of uric-acid which closely resemble it.

Breed and A. Winter, quoted by Lehmann, showed as a mean of several experiments, that between 3.7 and 5.1 grammes of phosphoric-acid, were eliminated by the urine in twenty-four hours. The amount was greatest at noon and after meals; least in the morning.

The alkaline secretions of the pancreas and liver, in the digestion of amylaceous and fatty food, must predominate over the gastric acid, whose special action is exerted over nitrogenous food. These alkaline secretions from the blood correspond to the *acidity* of the urine observed by Bence Jones during the digestion of *vegetable* food; but the blood, whose constitution is naturally alkaline, does not give up proportionally the alkalis of the chyle, hence the urine while fasting is more acid when the diet is vegetable, amylaceous, than when it is animal (nitrogenous).

Some persons cannot bear the use of free or carbonated alkalies without suffering severely in health, nor is their protracted use without ill effect. A flabby state of the muscles and an anæmized condition of the system frequently result from persistence with alkaline remedies, and their injudicious employment may indeed possibly induce the formation of oxalic acid.

The urine cannot be rendered alkaline for any length of time without risk of precipitating the phosphates of lime and magnesia, thus giving the patient a change of evils, instead of removing them. In reading the accounts of real or imaginary calculous affections a century ago, treated by the celebrated alkaline remedy of Miss Stevens, it is impossible to avoid noticing how very much of the sanguinous and fetid state of the urine of her patients was obviously engendered, not by the disease, but by the remedy. (*G. Bird.*)

We are also to consider in this connection the abnormal states covered by the following résumé of Dr. Barlow's, given as a means of diagnosing the seat of obstruction in cases of inseparable constipation.

If a sufficient quantity of urine cannot be received into the small intestines, or the circuit through the portal system in the vena cava

ascendens, or thence through the lungs and heart, if the systemic circulation, be obstructed, or if there be extensive disorganization of the kidneys, the due secretion of the urine cannot be effected.

Whenever stricture or other obstruction exists in the course of the small intestines sufficient to prevent the ready passage of fluids, the urine will be diminished in bulk in the direct ratio of the proximity of the obstruction to the pylorus; nearly absolute suppression occurring when the stricture is so high up as to allow but a small quantity of the fluid contents of the intestines to pass forward into the cæcum and colon.

Origin of the Mucus.—The secretion of mucus is not limited to the mucous follicles, which do not exist in the mucous membrane of the antrum highmorianum of the frontal and sphenoidal sinuses, the cavity of the tympanum, the ovula nabothi, the synovial sacs, nor in abnormal formations, as hygroma, cysts, &c. But all mucous membranes are invested, as Tilanus has shown, with an epithelial layer, whose cells are probably integral components of mucus; though epithelium is absent from the colloid matter of cysts of the thyroid gland, and of the liver, kidneys, and ovaries, which Virchow and Rokitanski have shown may be converted into mucus. The gelatin of Wharton is convertible into mucus just as permanent cartilage into glutin.

Normal mucus, however, consists of epithelium, held together by a pellucid juice. The ciliated epithelium is rarely found perfect, however, even in abnormal secretions.

Mucous corpuscles may always be found on a careful examination of the cloud in normal urine. They are abortive epithelial cells.

Berzelius found the nasal mucus rich in alkaline chlorides, especially of soda.

Nasse found also alkaline sulphates and phosphates.

Lehmann cites an analysis of the mucus of acute catarrh, rich in mucous corpuscles, and containing some granular cells, which yielded more potash and less soda in the ash of the mucus than in that of the blood serum.

The secretion of earthy phosphates has been ascribed to the mucous membrane of the bladder in a state of irritation. This is a question now subjudice.

Mr. Coulson relates that a wax bougie that had been introduced into the vagina was found covered with a layer of phosphate of lime and magnesia, and that a concretion formed of adipocere and crystals of phosphate of lime, have been found in the uterus; hence he finds it probable that similar effects may arise from irritation of the vesical mucous membrane.

The distinctions between pus and mucus which have so largely attracted the attention of the physicians of an earlier day, have lost all their

supposed importance since modern physiology has shown that the two fluids are separated only by the most gradual transitions, and that the mucus in inflammatory affections of the mucous membrane gradually presents large numbers of cystoid corpuscles, together with albumen, and thus acquires great similarity, if not a perfect identity with pus, both in respect to its physical and chemical characters. Even the quantity of *fat* in the purulent fluid secreted by the mucous membrane in a state of inflammation, is very often equal to that of genuine pus. The pus of mucous membranes commonly retains the property possessed by mucus of gelatinizing on the addition of water or acetic-acid.

Pus is rarely acid in the living body. That of congestive abscesses generally undergoes an alkaline fermentation, resulting in carbonate of ammonia and triple phosphate, besides a large amount of sulphide of ammonium. This is the more remarkable, as pus out of the body and exposed to air and warmth takes on a decidedly acid reaction, while its corpuscles have swollen and become more transparent, bringing the fissured nuclei more distinctly into view, until at last they are isolated without a trace of cell walls. Interspersed among these nuclei and the few perfect corpuscles are innumerable granules with here and there tablets of cholesterol and a confused mass of threads of margarin. At a later period (some months) the fats appear ensiform, lily-leaved, and intersecting bundles of crystals of margaric-acid.

The pus corpuscle swells, and its nucleus is rendered more distinct by the addition of water, of iodine one to nine thousand of water, of very dilute mineral acids (hydrochloric, one part in two thousand eight hundred of water; nitric, one to two thousand;) or tolerably dilute organic acids (acetic, lactic, tartaric, oxalic, racemic, or citric.) There is no more granular appearance with acids; with water there is often instead of a distinct nucleus an aggregation of granular matter with no distinct outlines, with fine granules in a state of active molecular motion. Strong iodine solutions coagulate the serum. The acids cause rupture of the capsule.

Strong Alcohol, Ether free from Alcohol, solutions of the caustic alkalis, especially when dilute, those of the neutral alkaline salts, and of the alkaline carbonates or borates, all prevent microscopic examination of the pus corpuscle; strong Alcohol coagulates the serum, weak Alcohol renders it turbid and the corpuscle appears caudate or pointed; likewise in Ether. Alkaline solutions cause their gradual disappearance.

TREATMENT.—Our therapeutical measures may be classed under four heads.

First. To correct the diathesis on which the morbid sediments depend.

Second. To relieve the distress and suffering attendant on the presence in the urinary organs of gravel or stone.

Third. To dissolve the stone.

Fourth. To extract it, either by lithotomy or by the aid of Civiale's lithontriptor.

The first object may be attained by removing the causes upon which the diathesis depends. Some of the more prominent of these causes are, errors in diet, including quality of food and irregularity in hours of taking meals; abuse of stimulants; use of water abounding in lime; excessive mental or bodily fatigue; undue exposure to atmospheric vicissitudes; insufficient nutriment; the depressing passions; tendency to gout and rheumatism; dyspepsia, and disease of the urinary organs.

When the depositions depend upon a *lithic-acid diathesis*, every thing of an acid nature should be avoided; a large quantity of animal food should be enjoined, and baths, frictions, and abundant exercise taken, to ensure a healthy action of the skin.

The *Phosphatic Diathesis* may depend upon a loss of tone in the digestive organs, too free use of animal food, profuse sweats, use of lime water, and over-exertion, mental or physical. Here a farinaceous and vegetable diet, and a free use of fruit and acids should be advised. If the depositions arise from gout attacking the mucous membrane of the bladder, the suitable medicines will speedily dissipate the morbid condition. When the diathesis appears to proceed from general debility, or derangement in the digestive or assimilative functions, our dietetic regulations, as well as our medicines, should be prescribed with reference to these conditions.

In all calculous affections a cheerful state of mind, with country air, or a sea-voyage to a hot or cold latitude, will prove serviceable.

To fulfil the second and third indications as far as possible, we shall, further on, point out those remedies which we deem most suitable. But it is a matter of much doubt whether there are at present any remedies known capable of dissolving a calculus in the urinary organs after it has attained a considerable size. We may be able to correct the diathesis upon which the morbid sediments depend, and to enable the urinary organs to expel calculi of small size; but the dissolution of a large stone in the bladder has never yet been effected. Such can only be removed by crushing them according to the method of Civiale, &c., so that the fragments will pass off by the urine, or by the operation of lithotomy. For the details of these important operations we refer the reader to the standard works on surgery.

The principal medicines in the treatment of urinary concretions are: *Cannabis*, *Uva-ursi*, *Nux-vomica*, *Sarsaparilla*, *Lycopodium*, *Cal-*

carea-carb., *Phosphorus*, *Asparagine*, *Monarda-punctata*, *Alchemilla-arvensis*, *Chininum-sulph.*, *Alisma-plantago*.

Cannabis and *Uva-ursi* are excellent remedies during a fit of the gravel, accompanied with painful micturition; discharge of slimy, purulent, or bloody urine; burning in the bladder and urethra during and after micturition; and itching at the extremity of the glans penis.

Dr. Gross has highly commended the employment of *Nux-vomica* and *Sarsaparilla* for the cure of calculous affections. So far as the former remedy is concerned, our own experience coincides with that of Dr. Gross. We have, in several instances, prescribed *Nux-vomica* with unequivocal benefit in calculous affections which apparently originated from chronic derangement of the digestive organs. In one case, likewise, where the patient experienced the most severe spasmodic pains from the passage of a calculus from the kidney to the bladder, with constant nausea, vomiting, painful and bloody micturition, and high-colored urine, the most prompt and happy results followed the use of *Nux*.

This remedy is decidedly indicated when lithiasis arises from dyspeptic symptoms, abuse of stimulants, excesses in eating, and also for the acute constrictive and spasmodic pains which proceed from the irritation of a calculus when passing from one point to another.

Lycopodium is adapted to patients of a lymphatic temperament, and who have been subject to chronic affections of the mucous membranes. The *Lycopodium* pains occur mostly in the urethra and perineum, and are of a burning, smarting, or cutting character during micturition. The urine is of a dark color, foetid, and deposits a red or yellowish sand.

Calcareo-carb. is suitable for the calculous affections of scrofulous or chlorotic children. It is indicated when the pains in the urinary organs and the desire to pass water are worse during the night, and the urine is of a dark color, foetid, and deposits a white sediment. *Calcarea* is also indicated in debility of the assimilative functions, emaciation, and great weakness and exhaustion of the whole system.

Phosphorus may be given in lithiasis occurring in broken-down constitutions from loss of fluids, and in old and debilitated subjects. The *Phosphorus* symptoms are characterized by loss of power over the urinary organs, involuntary passing of urine and faeces at the same time, sudden interruptions of the course of the urine, desire to urinate, with dull pains in the hypogastrium, emission by the urine of an ammoniacal odor, and deposits of a whitish or brick-dust sediment.

We have exhibited *Asparagus* in two cases of lithiasis dependent upon a gouty diathesis with marked success. In one of these cases the calculous symptoms all disappeared in a few weeks after commencing the medicine, and the morbid character which the urine had

presented for several years was entirely changed to a healthy condition. We are inclined to believe that Asparagus is a remedy of much greater power in urinary affections and in dropsies than has ever been attributed to it. Our experience with it in these maladies has been somewhat extensive, and generally of a most satisfactory character. It is especially called for when there is frequent inclination to urinate; burning and cutting in the urethra and kidneys; dull drawing pains in the groin; tenderness and pain in the perineum; sensation as if urine was passing off after all has been discharged; urine straw-colored or brown, with a very offensive smell and a whitish sediment; palpitation of the heart; rapid and oppressive respiration on the slightest exertion.

Monarda-punctata, *Alchemilla-arvensis*, and *Alisma-platanoides* also cover most of the symptoms enumerated under *Asparagus*, and may sometimes succeed this remedy with advantage.

Chininum-sulph. is recommended when there are minute crystallized grains in the urine of a reddish or yellowish color; increased flow of acrid and offensive urine; emaciation; irritability and much constitutional disturbance.

ADMINISTRATION.—During the violent paroxysms which occur in calculous affections, we may employ the medicines from the first to the third attenuation, and repeat every hour until the desired impression is produced. But, under ordinary circumstances, a dose once in twelve or twenty-four hours will suffice.

MALIGNANT TUMORS OF THE BLADDER.—Civiale regards the long-continued irritation of calculi as not without influence in the development of fungoid and other tumors about the neck of the bladder. On the other hand, the irritability of the bladder, which usually is developed by the growth of tumors, is like pain, not constantly present either with tumors or with calculi, and whenever the urine is allowed to remain in the bladder, or when the tumor in preventing the complete contraction of the bladder provides for the permanent retention of mucous blood and earthy sediment in the fundus or about the base of the tumor, this will have become an efficient cause in the production of calculi.

The Urine during the Early Stages has been but imperfectly observed. During the advanced stages, in the few cases, says Coulson, which have been accurately examined, the urine was offensive, sometimes acid, sometimes alkaline, it contained in the former case lithate of ammonia, in the latter crystals of triple phosphate; it also contained pus and blood-globules with organic shreds, apparently of mucus and fibrine. In a few cases, cells and cancer elements were discovered under the microscope.

"The peculiar structure of *villous cancer* and the quantity of

nucleated cells collected on the surface of the dendritic vegetation, render it certain that these cancer cells may be discovered in the urine, independently of the discharge of fragments of morbid growth itself. They should be sought for in the urine passed during severe paroxysms, especially when attended by copious haemorrhage. This is the only element of diagnosis available when complications with calculi, with enlarged prostate, or irritability of the neck of the bladder render direct explorations deceptive or impossible. Mr. Owen Rees also affirms from many years' experience in these examinations, the value and reliability of a diagnosis by the characteristic of cancer cells in the urine.

Carcinoma of the Bladder, either Primary or Consecutive on that of Neighboring Organs.—Fibrous Cancer occurs but rarely. Its tendency is to spread over large surfaces, up and down the sides of the bladder, implicating the female urethra and cartilaginous induration and metamorphosis of the muscular coat.

Medullary cancer occurs in nodules, between the coats of the bladder perforating the mucous membrane and sometimes producing a carcinomatous ulcer with raised edges.

The cauliflower vegetations soft, furred, vascular, generally bluish-red, and bleeding at the slightest touch, present the most frequent form; they have a rounded, flattened peduncle, arising from the membrane and sub-mucous areolar tissue, with delicate fibres, and develop a very fine membranous tissue within, in which a whitish, or reddish-white, creamy or medullary (encephaloid mass is formed. They are either isolated or grouped, and at last coalesce so as to form a very large loose-figured succulent, globular fungus, which fills out the bladder, in proportion as the latter becomes hypertrophied and contracted, consequent upon the permanent irritation. The fungi occupy chiefly the neck and fundus, the trigone, and parts near the urethral orifices. Here the largest growths are found, and from these first developments they spread over the entire inner surface of the bladder. They sometimes occupy diverticula in the bladder, descending from the fundus to the rectum and perineum. They are occasionally inflamed, covered, and interlaced with lymphatic exudation, and gangrenous. Their development gives rise to progressively increasing haemorrhage.

This variety of cancer frequently coincides with the cauliflower excrescences in other organs, occurring upon anomalous, serous and fibro-serous membranes, and upon the inner surface of the compound cystoidea, or of the peripheral follicles of areolar cancer that have been converted into large sacs. It is also allied to erectile tumors or epithelial formations on the mucous membranes.

The Characters of Haemorrhage in Malignant Tumors of the Bladder.—In every case, says Mr. Coulson, with which I am ac-

quainted, more or less has been discharged from the bladder in the course of the disease, and with a constancy which no other lesion of the bladder presents. The first symptom may be a discharge of pure blood from the bladder; and when this is soon followed by excessive pain and difficult micturition we have a strong presumptive sign of the existence of a vascular tumor. In other cases the urine is merely tinged with blood, at first the haematuria being accompanied by only slight symptoms of vesical lesion. These, however, quickly become more severe, present little or no remission, and the loss of blood increases. It may again diminish, and the urine become even clear for a time, but it is sure to recur again and again, until the end. It is not confined to the time of making water, but may even occur while the patient is at rest with the bladder empty.

Detection of Blood in the Urine.—Presumptive evidence is afforded by the coloration of the urine. When the quantity effused is too small to have changed the color of the urine more than to render it hazy, if it be allowed to repose in a white china vessel the blood-corpuscles will collect at the bottom in the form of a rusty-brown sediment. This is the general appearance in haemorrhage resulting from organic disease of the kidneys. (*Barclay.*) A little more blood gives to the whole mass of urine a smoky hue. The urine, if pale and watery, becomes pink, like flesh-washings.

From veins or arteries ruptured in the bladder itself, the blood appears in irregular clots, which will in passing have caused more or less strangury. If they have been retained a short time in contact with dilute urine, they will have parted with their coloring-matter and have been mistaken for fibrinous casts of the urethra. These little maggot-like coagula are in fact generally moulded in the ureters and denote renal haemorrhage.

Microscopic appearances and reactions of blood-corpuscles. (*Thad dicum, 228.*)

The non-granular surface, yellow color, and uniform size are characteristic. If the admixture of the blood with the urine have not been recent, the globules appear deformed, irregular; finally they disappear, and only amorphous fragments are left, such as occur in albuminous urine. In the chemical testing of urine, albuminous from the presence of blood, heat precipitates less than nitric-acid, as is usual with alkaline urines.

Urine may have all the shades of light and dark, red and yellow, without admixture of blood. Groundless apprehensions may be removed by the knowledge that the fruit of the prickly pear, red beet-root, madder, some varieties of the strawberry, logwood, sorrel, and some other substances stain the urine red; alkaline urine is reddened by rhubarb and senna, and large quantities of bile make a yellow that deepens towards blackness. This indicates a morbid state, but not in

connection with calculi. The pink tint appears in the urine of obstinate dyspepsia with organic lesions.

Blood may be voided black from the presence of melanic-acid. (*Marrett and Prout.*)

Blood and its proximate elements considered in their relations with Calculous Deposit.—The least clot of blood or other organic matter remaining in the bladder may become by its mechanical as well as chemical effects, the nucleus of stone. As it is the part of the physician to anticipate the surgeon, so it behoves us here to examine under what conditions such nuclei are liable to be deposited, the means of diagnosing and of removing them.

Causes of Sanguinolent Urine.

1. Traumatic :

a. Falls or blows, rough jolting in vehicles or on horseback, especially in connection with the presence of calculi.

b. Lesions by perforating bodies, accidental or by instruments, surgical.

c. Catheterism or other explorations of the urethra, neck of the bladder and fundus.

d. Irritation by passage of calculus from the kidneys along the ureters, tearing the mucous membrane.

e. Foreign bodies lodged within the bladder, and the efforts made to expel them.

2. Morbid states of the kidney.

a. Highly acute nephritis (rheumatic?)

b. Chronic nephritis with ulceration of mucous membrane.

c. Pyelitis with calculi.

d. Malignant tumors.

e. Tubercles in process of softening (very rare.)

f. Sanguine exhalation, spontaneous.

3. Morbid states of the bladder.

a. Chronic cystitis with ulcerations.

b. Highly acute cystitis, especially when caused by cantharides, either taken internally or absorbed from blistered surfaces.

c. Other drugs of analogous action, turpentine.

d. Fungous granulations.

e. Malignant tumors.

f. Hæmorrhoides vesicæ, rupture of enlarged veins.

Most of the causes which determine the presence of blood in the bladder will have increased the secretion of mucus. This will naturally adhere to the blood clots, and mechanically by its viscosity, chemically as a ferment, will combine to form with it a solid plug and a nucleus of deposits which its presence in the urine determines.

The strangury occasioned by its obstruction to the passage of urine

reacts on the increase of mucus secreted from irritated membranes. In order to ascertain by inspection, the presence of small quantities of blood in urine, Bence Jones recommends to let it stand for twelve hours, giving time for the blood globules which are insoluble in the saline urine to subside and form a layer at the bottom of the glass, whose character the naked eye can appreciate. The microscope tells this more quickly and at the same time discerns the co-existence possibly of fibrinous moulds of the ducts, proving that the haemorrhage is consequent upon congestion of the cortical structure of the kidney. If this constantly exist, Bright's disease is present and the low specific gravity and excess of albumen in the urine will generally confirm this inference.

If in sanguinolent urine we find crystals of uric-acid or oxalate of lime, the specific gravity high, and no fibrinous moulds, there is probably, a calculus present in one kidney. Perfect rest will be indicated and will help to enlighten this diagnosis. The presence of pus globules, (no chronic irritations of the bladder or urethra existing) may proceed either from pyelitis with renal concretions, or malignant tumors.

4. *Pain*, though a frequent, is not an invariable concomitant of blood from the passage of renal calculi. There are generally painful sensations during their passage, becoming violent like colics, from their arrest and strangulation. Renal haemorrhages in general are attended with local sensations of painful heat and weight and with rigors. The passage of calculi on previous occasions enlightens the diagnostic.

5. *Morbid State of the Prostate and Neck of the Bladder.*—
a. Irritation induced by the granular state of the mucous membrane, often associated with the presence of stricture below, or with chronic urethral inflammations, and with seminal emissions.

b. Psoric manifestations, sometimes metastatic.

c. Strangury, spasm of the external sphincter, generally of rheumatic origin and attended with presence of uric-acid in excess.

d. Ulcerations of the cervix uteri, &c.

7. General affections of the vascular system and changes in the composition of the blood itself, with reduction of fibrine.

a. Chronic scorbutis.

b. Acute scorbutis, purpura haemorrhagica (less frequent.)

c. Fevers malignant, or presenting the haemorrhagic type, viz: scarlatina, rubella, variola, typhus, plague, intermittents.

d. Epidemic haematuria.

In all cases where there exists great obstruction to the elimination of carbon as in well-marked affections of the portal circulation, especially when connected with organic disease of the liver or spleen, or less frequently when suppuration, particularly of a strumous character, is going on in the body, the urine is generally found to possess, in many instances, a deep purple or copper color, often verging on crimson, so

as to have led to the idea of blood being present. These deep tints appear to us to depend upon the presence of an excess of purpurine, which, on account of its solubility in water, never occurs as a deposit unless the urates are present. A deposit of urates colored by purpurine presents a tint varying from the palest flesh-color to the deepest carmine. Purpurine reciprocally favors the deposit of the urate of soda, it is also found coloring hippuric-acid when precipitated by hydrochloric-acid from concentrated urine. It interferes with the ready solubility of the urates on the application of heat, unless they be freely diluted with water. The deposit of pink urates, sometimes mistaken for blood, will, when dried on a filter, give up its purpurine to alcohol, and the absence of blood discs on microscopic examination will leave no room for doubt.

Bilious Urine.—Urine containing bile, tested by nitric-acid, becomes green. Bilious urine is essentially clear, though very deep-colored like porter. If, when examined in a slender glass, it still appears opaque, this must be from the combination of bile with pus or the other elements of the whitish urines, or if of deep brown opacity, from the admixture of blood.

Purulent Urine.—Pus renders the whole of the urine more or less opaque, but forms a distinct sediment when allowed to stand, very often carrying with it some portion of earthy salts. Urine mixed with leucorrhæal discharge, and that which is altered from decomposition are both wholly opaque.

GENUS II.—PARURIA.—1. HERNIA HUMORALIS.

During the acute stage of urethritis, the inflammation sometimes extends even to the spermatic cord, the epididymis, and the testicle. This is very apt to occur when the discharge is suddenly arrested by irritating injections, especially when the inflammation pervades the whole extent of the canal. When the substance of the testicle becomes involved, the pain is very severe, and febrile symptoms more or less severe set in. This inflammation may terminate in resolution, suppuration, or chronic enlargement and induration. In those instances where suppuration occurs the abscesses usually break externally, and form fistulous passages which are difficult to cure, on account of the continual irritation kept up by the secretion of semen, a portion of which is constantly being discharged through these ulcerated openings.

Chronic enlargements of the testicles should command our early attention on account of their strong tendency to terminate in scirrhouss degeneration.

In urethritis, and other affections of the urino-genital apparatus, the

prudent physician will always advise the use of the suspensory bandage, as a precautionary measure.

When the urethritis is so severe as to affect the lymphatic glands of the penis, the inflammation may be propagated to several of the glands of the groin, when we have bubo. (See p. 307.)

2. FISTULA IN PERINEO.

When the contraction is so great as to cause considerable obstruction to the passage of the urine, this fluid is forced by the frequent and violent efforts at expulsion, into the parts back of the stricture, in such a manner as to form a kind of *cul de sac*, which, from constant distention, eventually ulcerates an opening externally, and *perineal fistula* is formed.

Abscesses also arise sometimes from inflammation and tumefaction of the lymphatic glands in other parts of the urethra. These little swellings may open into the urethra, or discharge themselves externally. The most common seat of these abscesses is near the frenum or opposite the scrotum.

3. DIABETES.

PATHOLOGY.—Numerous hypotheses have been offered respecting the seat and nature of this singular malady, but no one of them appears to afford a satisfactory explanation of all its phenomena. The affection has been referred to a morbid condition of the kidneys alone, also derangement of the stomach, of the liver, to a defect in the glands, to suppressed perspiration, to an imperfect animalization of the blood, to the retrograde action of the lymphatics, and to an unnatural waste of the body, thus calling into increased activity the digestive and assimilative functions to supply the waste. Galen, who saw but two cases of diabetes during his life, supposed that it was caused by an inflammation of the kidneys, "which made them draw much serum from the emulgents." Aretæus attributed it to a feeble and relaxed condition of the kidneys, "which weakens the retentive faculty." Ætius believed that the cause consisted in "an afflux of sharp or salt humors, which continually stimulated the veins to expulsion." Van Helmont attributed it to a paralysis of the muscles of the bladder. Willis, who first pointed out the saccharine character of the urine, thought it was caused by "the dissolution and over-lax frame of the blood, whereby it loses its serum before it has done its office." Sylvius says, "the disease arises from a sharp volatile salt, either received from without, or in-bred in the parts." Cullen, Sydenham, Rollo, and Home, regarded the affection as "dependent primarily on a disordered state of the

digestive organs, in conjunction with a defect in the assimilating functions."

This last opinion is partially correct, and much credit is due to Bouchardat for having first pointed out the changes which certain aliments undergo in consequence of this disordered state of the digestive apparatus. Dr. B. broached the opinion that "in diabetes, starch was converted in the intestines into sugar, which passed into the blood and urine." Hence, a diet composed chiefly of neutral azotized substances, to the exclusion of starch, has been recommended for the cure of this disease, and in some instances, with success.

It may, then, be safely assumed, that the primary cause of diabetes consists, first, in a morbid state of the digestive and assimilative organs, which favors the formation of *dextrine* or *sugar*, from the starchy or farinaceous substances introduced into the alimentary canal, and its absorption into the blood and urine. The following are a few of the reasons for this opinion: Diabetes is nominally attended from the first with a disordered state of the digestive organs, as is indicated by uneasy sensations in the stomach after eating, impaired or morbidly increased appetite, eructation, nausea, vomiting, bad taste, and dryness of the mouth and tongue.

The function of the stomach is exceedingly complicated, and is affected, perhaps, more than any other organ of the body, by the natural or artificial circumstances which constantly operate upon living beings. When the organism is in a sound condition, and no disturbing causes exercise an influence, the digestive apparatus elaborates thoroughly a certain amount of chyle, and the assimilative organs take it up and appropriate it in a certain manner. But these functions may be impaired, suspended, or even unduly increased by moral and physical causes. Ill news, grief, chagrin, mortification, disappointment, anger, fear, dread, apprehension, and disagreeable sights often suspend both digestion and assimilation. These functions may also be impaired or suspended from the abuse of drugs, stimulants, tobacco, coffee, tea, sedentary habits, excessive bodily fatigue, want of sleep, the irritation of vitiated bile, or of the gastric fluid, or of acids, excesses in eating, or the use of indigestible food, inflammation, &c. They may also be morbidly increased by tonics and stimulants, like bark, the preparations of iron, the bitter infusions, wine, alcoholic liquors, cordials, and condiments.

In the malady under consideration, the digestive organs are in a peculiar condition. The thirst is intense, and the appetite voracious, yet the digestive function is perverted, the aliments are imperfectly converted into chyle, a superabundance of saccharine matter is elaborated, while the activity of the absorbents is astonishingly increased.

That farinaceous aliments are really converted into sugar in the

stomach of diabetic patients, is evident from the fact that traces of it have been detected in the matters ejected by them after the use of farinaceous food. It is also proved from the circumstance, that when this kind of food is withheld, both the secretion of urine, and its saccharine character is materially diminished.

Matteucci has demonstrated, that "starchy substances, when introduced into the stomach and intestines of diabetic patients, are converted into dextrine, or sugar, by the saliva, or the pancreatic juice, and are then absorbed directly into the blood, either in this form, or after having been converted into lactic-acid."

The experiments of Dutrochet, Cuna, and Matteucci have proved that different liquids may pass through the stomach, membranes, skin, and other animal tissues, by *absorption, imbibition, endosmose, or osmose*, the activity and direction of these phenomena depending upon the character and position of the fluid used, and the physiological condition of the structure acted on. Thus, "azotized neutral substances dissolved in the stomach by the acid liquid or by the catalytic action of pepsine, pass into the blood merely by the imbibition of the coats of the capillary blood-vessels of the stomach." Water, and alcoholic drinks introduced into the stomach, are also absorbed; they do not pass beyond this viscous, nor are they to be found in the chyle, until they reach the blood.

In diabetes, the digestive organs appear to have lost the power to elaborate healthy chyle, and also the absorbents of resisting the entrance of the saccharine fluids formed by this perverted action. Whether the nature of this morbid condition is of an inflammatory or non-inflammatory character, whether dependent upon exalted action or laxity, loss of tone or paralysis of the affected parts, is somewhat problematical, although we incline to the opinion that the disease is essentially dependent upon a relaxed and enfeebled condition of the digestive and assimilative functions.

But an objection will be urged to the above views, on the ground that the quantity of sugar found in the urine of diabetic persons is not at all proportionate to that of fecula taken as aliment; but this objection falls to the ground when we reflect that the *uric-acid* and the *urea* derived from the rapid metamorphosis of the tissues, are likewise converted into sugar, and pass, with the fluids arising from these changes, through the blood and kidneys, thus contributing to make up the enormous quantity of saccharine fluid which is observed in this affection. Prout has shown that the constituent element of *urea* and *sugar* are the same, and exist in similar proportions, from which fact we can readily comprehend the change from one substance to the other, and the affinity exercised by the saccharine fluid circulating in the blood upon the urea arising from the transformation of the tissues.

Second. As a consequence of this primary derangement of the digestive and assimilative functions, the saccharine fluids formed are transmitted rapidly through the blood, absorbing during their course the changed area, and finally eliminated by the kidneys. It is the office of the kidneys to separate from the organism all the substances incapable of further use, whether such useless substances are the product of the natural secretions, or of the transformation of the tissues. Now, as sugar is a substance foreign and injurious to the blood, it is taken up as fast as formed, and conveyed speedily to the kidneys, which separate it after it passes off through the bladder. This is evident from the fact, that when a solution of vinegar is injected into the veins of an animal, it does not remain in the blood, but makes its appearance very speedily in the urine. It is on this account that it is so difficult to detect sugar in the blood of diabetic patients, although traces of it have been found by Dr. Capezzouli, not only in the blood, but in the contents of an abscess of a diabetic patient.

When more saccharine matter is absorbed than can be speedily eliminated by the kidneys, it is highly probable that it passes off through the liver, the salivary glands, the pancreas, and even into the abscesses, rather than remain in the mass of the blood.

Third. The kidneys themselves being constantly acted upon by a fluid unlike their natural stimuli, become irritated, their vessels enlarged, and thus excited into unnatural activity. This fluid also gives rise to an inflammation about the orifice of the urethra.

DIAGNOSIS.—In tracing the progress of diabetes, and noting carefully the symptoms which are especially characteristic, it will be found that a very intimate connection necessarily exists between these symptoms and the pathological conditions above described.

In the first instance, there are indications of derangement of the digestive apparatus, as morbid appetite, distress in the stomach after eating, flatulent distention, acidity, eructations, nausea, heartburn, lassitude, and debility.

When the disease is fully formed, the prominent symptoms are urgent and insatiable thirst, voracious appetite, hot and harsh skin, and the elimination of an unusually large quantity of urine abounding in saccharine matter.

As the disease advances, the tongue is clammy and white, or clear and red; there is distress after eating; a peculiar hay-like odor issues from the body and lungs; there are pain and weakness, and sometimes swelling in the loins; anxiety, peevishness, despondency, impaired memory, vertigo, constipation; inflammation about the penis and the orifice of the urethra; rapid and great emaciation; loss of strength, impotence, coldness of the extremities, difficulty of breathing, dropsical

effusions, weak and frequent pulse; great prostration of all the powers.

The diabetic patient, who daily receives a few pints of fluid, may pass three gallons of urine every twenty-four hours for weeks together. Dr. Watson mentions a boy who, though restricted to one and a half pints in twenty-four hours, passed during that time ten and a half pints, without losing flesh or weight. On one occasion the boy was weighed immediately after emptying the bladder. Three hours afterwards, although he had taken neither food nor drink, his weight was increased by one pound, and he voided then sixteen ounces of urine, which Dr. W. ascribes to absorption from the air.

Diabetic urine is of a straw color, of a disagreeable odor, and a sweetish taste. The quantity voided in different cases varies very much; some patients voiding as much as fifty, or even one hundred pounds in twenty-four hours—while others pass only eight or ten pounds during the same period. The average quantity voided in twenty-four hours may safely be placed at about fifteen pounds.

Diabetes usually continues for months, and sometimes years, before it terminates fatally. Hitherto it has been almost invariably fatal; but may we not hope that the discoveries which are still being made in organic chemistry, as well as in the practice of medicine, will enable us yet to understand and conquer this singular malady?

The more recent researches on the Pathology of Diabetes show that the liver is supplied with blood through the medium of the hepatic artery and portal vein; in the lobules of the liver the bile is separated from the blood and sent off through the biliary ducts. During the progress of the blood through the liver, *sugar is formed*; and it is conveyed with the venous blood to the heart and lungs, through the medium of the hepatic veins which pass it into the *vena cava inferior*, and to the right auricle of the heart, from which it passes into the right ventricle, and from this into the lungs. The mode by which these operations are conducted is extremely intricate, requiring for its elucidation a clear knowledge of the *cerebro-spinal* and the sympathetic nerves.*

Analysis of the blood by Lehmann, as seen in his experiments on animals, shows:

1. That blood taken from the portal vein before it enters the liver, contains fibrine, albumen, fat; a small quantity of blood-globules, but no sugar.
2. That the blood in the *hepatic* veins, after passing out of the liver, contains a large quantity of sugar, some blood-globules, no fibrine, and no fat, the fat having passed on through the biliary organs; and

* Dr. Geary, of Phila., N.A. Jour. Homœo., Vol. 10, p. 627.

the fibrine has entirely disappeared, having in fact been converted into sugar in the liver.

And this is found to be the case whatever be the character of the food, whether vegetable, animal, or indeed composed of sugar itself; but the presence of fever arrests the production of sugar. The sugar created in the liver passes with the blood to the heart and lungs, but it disappears in its passage through these organs, since none or scarcely any is found in the arterial blood. It is thus seen that the liver forms sugar and transmits it through the heart to the lungs; and that the lungs convert it into some other material, supposed by Bernard to be lactic-acid, though it may not yet be known what the character of the new product is. The bearing of the facts already reached on the nature of diabetes is highly important, when the relations of the liver to the nervous system are remembered.

The liver is principally supplied by the *pneumogastric nerves*. These nerves originate in the medulla oblongata, very near to the respiratory bodies, and pass downward to enter the thorax, sending off a branch called the recurrent nerve, to the lungs; proceeding forwards to the stomach they disappear in a plexus of nerves; and from this plexus they spread over the liver.

Experiments of M. Bernard.—1. Having cut the pneumogastric nerves in the neck, he killed the animal next day, and found no sugar in the liver.

2. He divided the branch of the same nerve that comes off from it, at a point below the origin of the pulmonary branches, leaving intact the connection between the lungs and the liver. After this operation the formation of sugar in the liver went on as usual.

3. By a series of experiments with a sharp-pointed instrument, he produced an irritation of the spinal cord, at the spot where the pneumogastric nerves arise, which in a very short time had the effect of making the urine diabetic.

4. After the first experiment he passed a current of galvanism downwards to the liver, which had no effect; but when the same current was passed upwards towards the origin of the nerves, sugar was formed in the liver, but in a proportion far less in excess of the normal or healthy condition.

These experiments prove that the vital force passes from the brain through the pneumogastric nerves to the liver, and enables this organ to convert the fibrine of the blood into sugar; but the liver can only form the sugar when in telegraphic communication with the lungs; and a deranged condition of the nerve-centre, either by disease or injury, produces a surplus quantity of sugar, which not being consumed by the lungs, passes on into the renal arteries to the kidneys which separate the extra sugar with the urine; and 5th, It is proved that

diabetes is caused by a diseased state of that part of the brain in which the pneumogastric nerves are immediately connected; and therefore no change in the diet of the patient can alone cure this disease.

TREATMENT.—If either of the above theories advanced respecting the nature of diabetes be correct, it is still true that one of our most important therapeutical indications consists in pointing out a proper system of dietetics. We have seen that through a perverted action of the digestive apparatus, all the farinaceous or starchy substances consumed become converted into sugar, and thus afford material for the perpetuation of the malady. A rigid abstinence from everything of a feculent nature should, therefore, be insisted on, while, at the same time, a diet as nutritious as possible should be enjoined, consisting of beef, mutton, venison, fowl, game, fish, animal soups, jellies, and articles of this nature. We commend most strongly as a valuable auxiliary means in this affection, sea-voyages, and frequent applications to the whole surface of the body, of salt-water. The free use of ice, in small quantities, gradually dissolved in the mouth, will also prove serviceable in allaying the extreme thirst which consumes the patient.

The internal remedies which have been found most serviceable in this disease are: *Acid-phosphoric*, *Carbo-vegetabilis*, *Nux-vomica*, *Acid-muriatic*, *Baryta-muriate*, *Belladonna*, *Uva-ursi*, *Rhus-radicans*, *Conium-maculatum*, *Digitalis*, and *Opium*.

Kreasote.—A man, aged twenty-eight, discharged in twenty-four hours twenty quarts of urine, containing twenty ounces and nine drachms of sugar. He was cured by Dr. Michalsky, by the continued use of Kreasote pills and a rigid prohibition of all vegetable food. (*Prague Ver. Ztng.*, No. I., 1855.)

M. Pierry says a woman passed ten quarts of urine daily. She ate 120 grammes of sugar-candy and two portions of meal, with scarcely any liquid nourishment. She was losing nearly 700 grammes of sugar in twenty-four hours. After this the urine diminished to $2\frac{1}{2}$ quarts per day, on treating the other symptoms and keeping up the supply of sugar.

Dr. Geary gives two cases of diabetes.* In one of these a lady who had the disease as a consequent of cerebral irritation and apoplexy—dietetic regulations made the disease worse rather than better. The second case, a boy, aged eleven, had diabetic symptoms always when affected with fever. After one attack he had “intense thirst, considerable fever, and passed from eighteen to twenty pints of water in the twenty-four hours; the color was light, the odor natural, gravity 1010, without any trace of sugar.” In view of the cerebro-spinal view

* N. A. Jour. Homœop., Vol. X., p. 629.

above given, he was treated with Acon. 2, and Arsen. 6, which produced slight improvement. The improvement being but slight, Ignatia 2, and Bell. 2 were given alternately every hour; and a powder of *Cuprum-acet.* every six hours. The patient immediately improved, and in about eight days was free from every trace of the disease.

4. DIABETES MELLITUS, COMPLICATED WITH PIARRHÆMIA, OR FATTY SUBSTANCE IN THE BLOOD.

Dr. Coote, of the Middlesex Hospital, London, on reporting one case and reviewing the authorities on this disease, concludes: 1. "That piarrhæmia consists in an excess of saponifiable fat in the blood, not in the mere liberation of fat from its combinations.

2. The excess of fat in the blood may be the result: *a*, of the excessive ingestion of fat (as in piarrhæmia during digestion); or, *b*, of the diminished elimination of the same, (as in hibernation and pulmonary diseases). It is not clear to which of these categories alcoholism belongs. It is *conceivable* that its elements may be *directly* converted into fat by deoxydation; but it seems more probable that the conversion is effected *indirectly*, the hydro-carbon of the alcohol attracting to itself the free oxygen which would otherwise have been employed in the combustion of the fats of the food, and so permitting the accumulation of the latter in the blood.

3. Fat, if directly ingested, may enter the blood with the chyle through the thoracic duct; but it is clear from the present case that it may also be elaborated in, and absorbed directly from, the liver.

4. Piarrhæmia is not a *result* of diabetes mellitus, for either may exist without the other. Both seem to be the consequences of the same derangement of the functions of the liver, which overloads the blood, sometimes with excess of sugar alone, sometimes with an excess of sugar and fat combined.

Why the liver should deal so differently in different cases with hydrocarbons submitted to its influence it is hard to say. It seems not improbable that sugar alone is elaborated in the first instance, and that the excess of fat is the result of de-oxidation of this substance; the conversion of sugar into fatty substances is not only capable of being effected experimentally, (as in the production of butyric-acid by fermentation of sugar under the influence of casein,) but has been shown to take place in the animal economy, in the formation of wax by bees fed only on sugar. (*Miller's Chemistry*, Vol. III., p. 738.)

5. The pathology of blood, milky from molecular albumen, must be considered as still almost wholly negative. "It is probably never an independent affection; but neither is it a mere accidental consequence of piarrhæmia. Its apparent relation to albuminuria seems to point to

some organic change in the constitution of the plasma of the blood itself." (*London Lancet*, Nov. 1860, p. 411.)

CHEMICAL EXAMINATION OF URINE IN DIABETES AND RELATED DISEASES.

Diabetic Urine.—Diabetic urine always contains in addition to free grape sugar, the compound of this sugar with common salt, and it frequently happens that this is the only compound which separates in crystals from diabetic urine. This fact is to be considered in relation with the common instinct to add much salt to amylaceous food which during digestion yields much sugar.

Sugar is also met with in no inconsiderable amount in the blood of the carnivora, and must therefore be dependent upon some other source besides the carbo-hydrates introduced into the body from without.

Mialhe has suggested that diabetes mellitus depends solely on the absence of the necessary quantity of alkali in the blood for the oxidation of its sugar. It would certainly seem probable, says Lehmann, from careful examination of the chemical facts in our possession, that this simultaneous action of the alkali and of the free or imperfectly fixed oxygen upon readily oxidizable substances might afford an explanation of the entire process of oxidation in the animal organism. But this is by no means the case. So far as my direct investigations of the blood of diabetic patients extend, the most careful ash analyses do not show that there is any such diminution of the alkali, nor do the analysis of the serum exhibit any diminution of the albuminate of soda.

Injecting grape sugar into the veins of dogs and rabbits, Bernard formed the urine alkaline and no sugar in it, but Lehmann in thirty-seven cases always found sugar and the urine acid, often intensely acid, and even when rabbits had been fed before and after the injection with cabbage leaves, carrots, grass, and other substances rich in alkalies.

But sugar can only be separated from the blood when there is excess of water in the latter, then it is separated so rapidly as to appear in the urine five minutes after its injection and that when only 0.1 of a gramme has been injected.

When one equivalent of sugar with 1, 2, or 3 equivalents of caustic potash, or its carbonate was injected, or when the sugar and potash compound artificially prepared from alcoholic solutions, was injected in such quantities that 0.1 of a gramme of sugar reached the blood, the urine remained alkaline for at least ten minutes after the injection, becoming then decidedly acid, in which state it continued for at least five hours, even when the animals had been fed in the interval on green food. In the seventh hour the free acid diminished when food of this kind had been taken. In all cases sugar could be detected in the

urine from the first five minutes after it was injected, to the eighth and often to the eigtheenth hour. The acid produced is certainly neither the phosphoric nor hippuric, but I have been unable, from the small amoun of material for investigation, to decide what it is.

Ammonia.—Physiological origin. This question is still in the domain of debatable science. Neubauer has settled it, however, that in case of taking into the stomach the hydro-chlorate of ammonia, this salt passes unchanged through the system and is discharged in the urine.* It remains to be shown whether ammonia in other forms and combinations is thus eliminated, and whether or not it is spontaneously generated in the organism, whether by its normal or pathological acts. One test, the formation of white vapors on contact of the breath with a glass rod dipped in hydro-chloric-acid frequently fails, says Thudicum, in cases with the most marked symptoms of uræmia. Here, as in putrid or septic fevers, analysis of the blood and secretions, especially of the urine, are necessary, in order to establish the relations of ammonia with toxæmia or septicæmia. The ammonia sometimes found in the urine may have been introduced either by our food and drink or by the air which we breathe.

Radishes are rich in ammonia, so is tobacco smoke and the fumes of barn-yards, of privies, and of dissecting-rooms.

Bence Jones found that after the salts of ammonia had been taken internally they did not re-appear identically in the urine, but their highest product of decomposition, *i. e.* that of nitric-acid; a discussion on this subject between Jones and Lehmann will be found in *Lehmann's Phys. Chem.*, p. 127 of Vol. II., and *Proceedings of the Royal Society*, Vol. VII., p. 94.

In typhus, scarlatina, variola and other severe forms, of fever ammonia often exists largely in the blood, but not constantly.

The presence of ammonia in normal urine is supported by the analysis of Boussingault, and especially those of Neubauer with Sclos-ing's method for the volumetrical analysis of ammonia in the urine. See also the analysis of Heintz, with the chloride of platinum, and the researches of Bæcker and De Vry. Liebig, Scherer and Lehmann have expressed their doubts. Dr. Richardson in his Astley Cooper Prize Essay for 1856, "On the Cause of Coagulation of the Blood," has endeavored to show that ammonia is a regular constituent of the blood and the solvent of fibrine in the living body.

Demonstration of the presence of the Ammonia in Urine. †— Liberated from urine by admixture with the milk of caustic lime, ammonia is made to rise as gas in a vacuum at 40° to 50° of temperature, into a solution of sulphate of silver and arsenious acid. It

* Journal für. præc. Chem. Bd. 64, p. 281.

† Neubauer, Journal für practische Chemie, Bd. 64, p. 177, and Anleitung, § 56. Vol. II.—52.

causes a precipitate delicate, dense, yellowish white, constituted by arseniate of silver, and easily soluble in the slightest excess of acid. Urea is not decomposed by such treatment. For the quantitative determination of ammonia, see *Thudicum*, 220 and 225.

Ammonia is non-existent in fresh urine. In mentioning the experiments of Boussingault, Lehmann questions whether the colored extractive and other nitrogenous matters of the urine, more easily decomposed than urea, may not have furnished the ammonia appreciated.

Ammoniacal Urine the Result of Spinal Lesions.—The idea that deficient nervous energy in paraplegia was the direct cause of decomposition, (converting the urea into carbonate of ammonia) is now abandoned, says Mr. Barclay, in his treatise on "Medical Diagnosis." Does he mean that the urine is found ammoniacal in the paraplegic and other non-inflammatory conditions, merely on account of having been permitted to remain in the bladder long enough to undergo its normal changes at the temperature of the living body? Normal urine kept after being voided, at a temperature of 98°, F., becomes ammoniacal a few hours. Such would be the length of time required for the retention of urine in the bladder in order that it should in the first instance become ammoniacal, and thus be prepared to act as a specific ferment on fresh urine.

Here Dr. Snow's experiments seem to show that urine of various dates, not yet alkaline, shortens the period of ammoniacal change for fresh urine mixed with it gradually. So that normal urine at 100°, F., dropping from one vessel into another, is constantly acid in the upper vessel, which is washed every six or eight hours, constantly alkaline in the lower vessel, in which a few drops of stale urine are left each time. The access of air accelerates the ammoniacal change in this experiment, or contact with the healthy living bladder would retard it, as is seen in cases of enlarged prostate, where the urine evacuated artificially only twice a day is still acid.

Dr. G. Bird observes that mechanical obstruction, to the complete evacuation of the bladder, as by viscid mucus or by a clot of puriform mucus once gelatinized by the carbonate of ammonia, ensures the ammoniacal change in the urine and deposit of its earthy phosphates with carbonate of lime, even though the bladder retain contractile power sufficient for complete evacuation of its ordinary or normal contents. Hence when the washing out of the bladder by injections is neglected, the patient, whose innervation has been improved, may still continue to suffer from the effects of a foregone cause.

There are differences of opinion as to whether spinal lesions impairing the innervation of the urinary organs, cause ammoniacal urine merely by determining the incomplete expulsion of the contents of the bladder, or by directly determining an unhealthy secretion of mucus,

alkalescent like that of inflamed mucous membranes. Mr. Curling inclines to the latter opinion, adding that the extension by continuity of tissue, or by the general lesion of innervation of this irritable state of the bladder to the kidneys may cause the urine to be actually secreted in an alkaline state. Mr Bird has observed the change from alkaline to normal urine in a case of complete paraplegia, effected by the simple precaution of washing out the bladder with warm water injections, a measure imperative in such cases, whether it be regarded as a prophylactic or merely as palliative of an incurable state. Still G. Bird regards the *depressed vitality of the bladder* as the initiative in the alkaline fermentation of urine. The reduction of the vesical sensibility probably coincides with sub-acute inflammatory change, by abstracting the control of the sympathetic nerves over the vascular system, as observed in the numerous experiments on the cervical plexus and elsewhere where sections have been made, isolating a given part of the body from this ganglionic innervation. The eye becomes immediately suffused by congestion, while the iris no longer dilates consensuously with the needs of the retina. The lesion of organic sensibility here as in the bladder coincides with modifications in the vascularity and consequently in the secretion from the capillary vessels.

Alkaline urine from nervous exhaustion, watching, mental exertion in study, mental exertion in the forum, &c., sexual excesses, spermatorrhœa, will be appreciated on the same general principles with deficiencies of the sympathetic innervation through lesions of the spinal cord. Whatever depresses the nervous vitality opens the tissues to vascular inundation; as on the other hand, all that depresses the circulation and reduces or deteriorates blood globules, gives the signal for spontaneous manifestations of neuralgia, spasm, or other forms of hyperæsthesia.

Owen Rees has shown the benefit of alkaline treatment where the alkalinity of the urine is due to irritation or inflammation of the mucous membranes.

Dr. Simon states from observations made under the authority of Prof. Schönlein, of Berlin, that in continued fever, about the end of the second week, and in severe typhoid, at the period when comatose symptoms set in, the acid and deep-colored urine becomes pale and alkaline, containing carbonate of ammonia in solution. This general observation is not confirmed by G. Bird or Becquerel, but G. Bird observed it to be the case in one epidemic of maculated typhus and Dr. Graves, of Dublin, has made similar remarks in sporadic cases where great exhaustion existed.

The researches of Drs. Sutherland and Rigby on the urine of the insane, appear to authorize the assumption that central lesion, independent of any obvious implications of spinal mischief may induce

the conversion of urea into carbonate of ammonia. They found the urine effervescent on the addition of *Acetic-acid* in thirty-four per cent. of cases of dementia, thirty per cent. of melancholy, and sixteen per cent. of mania.

The urates often coexist with free uric-acid, oxalate of lime, pus, &c. blood. Such deposit will be diminished by heat, which dissolves the urates. Uric-acid appears in visible yellowish-red crystals, which behave as before-mentioned, and are not affected by acetic-acid. Pus and blood are both albuminous; they are made to deposit by the same heat and nitric-acid tests which dissolve the urates and phosphates, and uric-acid; they in turn are dissolved and gelatinized by alkalies. Blood contains haematin, which pus does not. If difficult of recognition on account of its dissolved state in ammoniacal urine, cautiously neutralize this with a trace of acetic-acid in excess, heat in a water-bath at 151 F., when all the albumen will be found in form.

5. ALBUMINURIA.

We have already treated of albuminous nephritis at p. 21, of this volume. Dr. Joslin details some cases of this disease* by homoeopathic attenuations, which are thus summed up: Case 1. A New-York merchant, temperate, aged thirty-three; found to be subject to this disease Nov. 13, 1857. A month before spent some nights at a country-seat in a malarious district, where he took intermittent fever, from which he recovered under Bry. 30. After dropsical symptoms appeared he was treated for a month with little effect, while the enlargement of abdomen and limbs increased; by the 25th of November his ordinary clothes would not button round him, the feet, legs, and abdomen were distended, breathing becoming difficult.

December 13. The face pale and yellowish, the abdomen much distended, and the pressure of the liquid, especially against the diaphragm, rendered the respiration laborious. No oedema of the abdomen, but it had pervaded the whole subcutaneous areolar tissue of the inferior extremities, feet, legs, and thighs; urine reddish brown, and after standing, turbid; cough.

The following symptoms have been produced by *Apis-mellifica*.†

"Paleness of the face; abdomen full, swollen; with swollen feet and scanty secretion of urine; scanty, highly-colored urine; cough in the morning; breathing difficult." For the above symptoms Apis 2 was prescribed in water every four hours.

In the first day the abdomen increased in circumference three-fourths of an inch, and a general aching through the head, unusual to the patient. These two symptoms were regarded as medicinal

* Amer. Hom. Review. Vol. II. p. 260.

† Hering. Brit. Jour. Hom. Vol. IX.

symptoms. On the next day the abdomen was diminished half an inch, and as much more the next day. There was no change in size of abdomen in two days under *Apis* $\frac{1}{4}$; in the next two, under the same, decidedly reduced; and by the same amount in the next three under *Apis* 2. This last was continued four days longer, and the ascites was slightly reduced, that of the extremities also lessened, that of the thighs gone. In the three succeeding days, much reduction of swelling, especially in the feet, under the prolonged action of *Apis* 3 previously given. In the following week, beginning Dec. 31st, the improvement continued under *Apis* 12: the upper half of the legs became normal and the fat reduced. In the next thirteen days, under the same, a great improvement in general strength and flesh, and limitation of effusion to the lower part of the legs, where only a very small quantity remained. In eight days more the œdema was entirely removed under *Apis* 30. After two years neither the encysted nor cellular dropsy had in any degree returned.

In a second case treated by Dr. Joslin, the urine was half albumen. The dropsy increased in three days under *Apis* 12. In the next two days, under *Apis* 10, the peritoneal dropsy increased with a rapidity unprecedented in the case, whilst a little improvement occurred in the thighs, and more in the urinary secretion. Two days afterwards, under *Apis* 3, the albumen was found to have entirely disappeared, the ascites to be greatly, and the œdema of the whole inferior limbs decidedly reduced, and the urine to present a remarkable violet hue. In the next two days, under *Apis* 3, diluted one hundred fold, the ascites slightly improved, and the œdema decidedly reduced, the albuminuria remaining cured. In four days, under *Apis* 12, the ascites and the dropsy of cellular tissue were entirely removed. Some tinge of violet was observed in the urine till after the action of *Apis* 30, but no dropsical symptom, nor any evidence of albuminuria had appeared a year afterward.

GENUS III.—HYDATIDS.

Hydatids are found in serous cavities, the alimentary canal, in the passages that open into the cellular tissue between the muscles, and in the proper substance of different organs. They are found in mammalia, all reptiles, birds, and fishes; though they are not known to exist in insects. In the human subject no period of life is exempt from them, from an early stage of uterine existence. (*Portal.*)

Hydatids are *parasites*. They have no genital apparatus, no organs for respiration or circulation, and no apparent nerves. They only live in the interior of other animals, perish within a year or two after development, and often in less. Few only can be excited by

stimulants to distinct movements. The cystercus whirls itself about in water, protruding its suckers.

Hydatids are divided into two classes, cephalocysts and acephalocysts.

I. *Cephalocysts*.—Divided into,

1. Cystercus, or bladder-tailed hydatids.
2. Polycephalus, or many-headed; not found in man.
3. Dicerna, or two-headed.
4. Echinococcus, rough hydatids, very rare.

II. *Acephalocysts*.—These are more common in man, in various organs and of all sizes from a mustard seed to a large orange. Generally spherical, composed of a white, clear, limpid, semi-opaque, pulpy vesicle. This vesicle, which forms the hydatid proper, is from $\frac{1}{4}$ of a line to $\frac{1}{2}$ of an inch in thickness, often separable into two or more tunics, and so delicate as to yield to the slightest pressure; its own contents often break through the thin walls after removal from the body. After being ruptured it sinks into a soft, irregular, pulpy mass, of opaline color, which swims in water, and resembles coagulated albumen. Sometimes the acephalocyst contains several smaller ones, each within another. Each one having arrived at maturity, produces another within itself, each successive production being smaller (*Gross*.)

Causes of Acephalocysts.—“In Cincinnati,” says Dr. Gross, “there are annually killed more than one hundred thousand hogs, of which not one-tenth are free from this disease.” Whole droves, of several hundred, on being brought from the rich prairie-districts of Ohio, Indiana, and Kentucky, “are highly fed for six or eight weeks with corn, a strong food, which keeps the portal circulation in a state of congestion which tends to inflammatory irritation and development of acephalocysts in the liver. The irritation thus set up is of a specific nature, or, what is the same thing, a sort of plastic lymph is deposited; the particles of this lymph arrange themselves in such a manner as to create an inferior being, an *entozoic parasite*.” There is probably no inflammatory action generally, but the origin of the parasites is certainly connected with the excessive use of a strong diet.

SEROUS CYSTS.—These bear some resemblance to the acephalocysts, but they differ from them in being attached always to surrounding tissues which supply them with blood. They are sometimes solitary and simple, or with a single cavity. Others are divided into many compartments, each containing a peculiar fluid. In some cases a large number of serous cysts may be aggregated into one cavity, attached directly to its parieties or joined together. (*Drake, Louisville Medical Journal*, 1841. P. 294.)

These cysts, says Gross, are a new formation caused by a perverted

state of nutritive function. Others appear to be formed out of existing textures, sometimes of serous, at others of a mucous nature. To the former belong the cysts of the ovaries, enlarging the vesicles of De Graaf; to the latter kind belong those developed in the kidneys and female breasts from the obstruction of the excretory ducts. In this situation it may receive no accidental covering from the organ in which it is located. In the ovaries we generally find that the cyst is easily provided with thick, dense parietes, separable into three distinct layers, the internal of which consists of the capsule of the vesicle of De Graaf, the second of the albuginous, the third of the peritoneal coat. The same thing occurs in the spleen and liver. When the cyst is formed out of existing mucous membrane, it generally in a short time assumes all the properties of the serous texture. (*Elements of Pathological Anatomy.*)

These cysts may be said to be secreting surfaces without excretory ducts, hence their great size, increasing by the stimulus of distention and may arise to the bulk of the gravid uterus, presenting externally all the characteristics of ascites. Dr. Drake mentions two cases in which ovarian cysts so filled the abdominal cavity that their character could only be known from their previous history. (*Louisville Medical Journal.*)

Mr. Owen. (*Lectures Compar. Anat.*, p. 45) regards the common hydatid rather as "a morbidly enlarged organic cell, than as an independent animal even of the simplest kind." He says "the tunic of the acephalocyst is usually studded with more or less numerous and minute globules of a clear substance, analogous to the 'hyaline,' whose remarkable properties in reproductive cells Dr. Barry has recently described, and from which the young acephalocysts are developed." Hydatids have no voluntary contractile property, and no function but the assimilation of the surrounding fluid, and the development of new cells from nuclei of hyaline.

Serous Cysts, when they are not natural cavities enlarged, but are adventitious productions, are in all cases allied to those *semi-solid, atheromatous, and steatomatosus tumors called wens.* Even these may be natural cellules in a state of hypertrophy, reinforced in their parietes by new deposits of nutritive matter, or by condensation of surrounding cellular tissue. In this way an obstructed follicle may, in the opinion of Sir A. Cooper, expand into an atheroma, and the fatty tumors generally may be nothing more than hypertrophied adipose vesicles. (*Drake.—Gross, Pathol. Anat.*)

Hydatids.—These tumors are more common in the liver than in any other organ. They are common in various animals, especially sheep, and the liver with them is the organ most likely to be their seat. When one sheep of a flock is affected with them all the rest of the

flock will become so. They are more common in wet seasons and in pastures where the ground is too wet.

The contents of hydatids are usually transparent and limpid as water; though the fluid is so acrid and irritating to the serous membranes that when, from the bursting of a hydatid cyst, the contents are effused into the peritoneal cavity, rapid and intense inflammation is excited. Mr. Hawkins gives several cases in which the fluid from hydatid cysts in the mammae caused sloughing and fungoid ulceration. In some cases the cyst contains more solid matter, consisting of phosphate of lime, a little carbonate, and albuminous substance.

When there is a hydatid tumor in the liver, there are often others in the lungs, spleen or some part of the mesentery. In some cases, thousands of hydatids are found under the peritoneum, and between the folds of the mesentery.

Hydatid tumors, when once established, throw off new tumors which grow to a larger size and become the parent cysts of others like themselves. It is often difficult to determine the point in which the parent tumor originated. The largest one, with the thickest walls, is generally found in the liver when others are found in the lungs, or in the spleen or mesentery. It is supposed that single germs may pass through a branch of the hepatic or portal vein, or into one of the lymphatics, into the lungs, or into other parts of the liver, or into the mesentery. This view of the movement of the germ hydatids requires that they should pass backward against the current of the blood in the veins that uniting form the *vena porta*. But it is still true that the largest, and apparently, the parent cyst found any where is usually in the liver. (*Budd, On the Liver*, p. 354.)

The only specific remedies known to have affected the destruction of these *entozoa* are: 1. *Iodide of Potassium*; 2. *Chloride of Sodium*. The exemption of sailors from hydatids was attributed by Mr. Bush, of the Dreadnought Hospital, to the influence of sea air.

The effort to remove hydatids by puncturing them to discharge their contents has in a few cases succeeded, but in many more the most disagreeable consequences have resulted. The effort should not be made unless the urgency of existing symptoms calls for immediate relief. (*Ceser Hawkins*.)

The disease called the *rot*, in sheep, depends on the existence in the liver and gall-bladder of the parasites, known as *liver flukes*, *distoma-hepaticum* and *distoma-lanceolatum*.

The putrefaction of animal substances does not consist in chemical decompositions alone, but in the formation of minute animalcules, called *infusoria*. These exquisitely small, but living and organized beings, consist, at first, of only "one or more small globules, grouped together side by side, and endowed with a sort of creeping or rotatory motion."

The animalculæ called vibrios, are found in various animal fluids, and may almost always be seen by examining, with a microscope, the matter that accumulates between the teeth. Lieuwenhock has shown that "scarcely any animal substance putrefies without becoming the food of myriads of animalculæ."

In every article of food, that is permitted to stand only a few hours in a warm place, putrefaction commences by the spontaneous formation of minute living animals. A boiled potato, in a small quantity of boiling water, left to stand in a glass vessel well covered, was found by Mr. Ellis, after twenty-four hours, to be alive with moving animalculæ; and another raw potato, similarly situated, and by its side for an equal length of time, had undergone the same change. The animalculæ were "of the linear shape, very distinguishable, moving to and fro with great celerity, so that there appeared to be more particles of animal than of vegetable matter in each drop." The same result followed in every experiment made, whatever kind of water was used. Minute living creatures were formed, which "moved rapidly in different directions, turning themselves quickly round at the same time that they moved rapidly forward." (*Philos. Transactions*, Vol. 59, 1767.)

Experiments have been made by Buffon, Reaumur, Ingenhouz, under great diversities of situation, and in all of them microscopic animalculæ were developed, in all infusions of animal or vegetable matters. They put boiling veal broth into a vial, previously heated in the fire, and, hermetically sealing it, they left it three or four days. When examined, they found in it the same development of living infusoria. And it will everywhere be found that, wherever vegetable or animal matters are permitted to stand a few hours, under favoring circumstances, vegetable fungi or animalcular infusoria will be developed, with a rapidity proportioned to the temperature. Even the mucus that adheres to the teeth almost always contains them; and it has been shown, by M. Mandl, that the *tartar* on the teeth "consists almost entirely of the skeletons of dead vibrios, cemented together by dried mucus."

The difficulty of accounting for the origin of organized living products, in situations in which it would seem impossible that seeds or oviform matter could be deposited, does not destroy the force of well-attested facts. The *filaria*, or thread-worm, originates, in some way in the eyes of horses, and grows to an inch in length, as large as a sewing-thread, and moves rapidly about in the aqueous humor. It causes inflammation, opacity of the cornea, and may be extracted. (*Lawrence on Disease of the Eye*, p. 532.) These thread-worms have found in the eyes of cattle, sheep, pigs, frogs, lizards, fishes, birds, and even in the human eye. Dr. Guetner extracted one, called a Guinea worm from the eye of a negro girl, in the West Indies. The process

by which they originate, is not our present object. Many philosophers have supposed that living organized beings of the lowest orders may be produced by a spontaneous vital process, which at first extends only to the formation of the simplest and lowest grade of animal life. Infusoria and vibrios are reproduced by solitary propagation, by one cell growing on and detaching itself from its parent. From this low beginning they rapidly improve, as the species advances to more perfect forms. "To suppose," says Darwin, "the eggs of former microscopic animals to float universally in the atmosphere, and pass through the sealed glass vial, is so contrary to apparent nature as to be totally incredible! and, as the latter are viviparous, it is equally absurd to suppose that their parents float everywhere in the air, seeking an opportunity to leave their young in paste or vinegar." Berutti endeavored to show that infusoria are developed by spontaneous generation. He considers the *acarus scabiei* the product, as well as the cause of itch; and says that zoospores "are not genuine animacules, but organic molecules, formed in the minute extremities of the spermatic tubes, by the effect of an exuberant nutrition." In the same way we may account for the origin of intestinal worms, which nowhere exist in the outer world. The *sarcina ventriculi*, found in the stomach, have a similar origin. It is no longer believed that all animal existences, found in unusual places, must necessarily have been produced from eggs introduced from without. We see "worms found in seeds, and nuts, in woods, in stones, on leaves and plants, and in them. We see clouds of flies suddenly rising in new localities, and 'army worms' emerging from the ground and marching in solid phalanxes, over the neighboring fields, spreading destruction before them; and also the most minute creatures developed in offensive waters, sour wines, pestilential air; and we see offensive effluvia and exhalations rising from plants, earths, and stagnant waters, in which noxious animacule are developed." Thus, wherever dead animal or vegetable substances exist, in combination with heat and moisture, we see these substances speedily invaded by the destroying legions of cryptogamic plants, or living infusoria. We see that the disorganization of these substances is effected, not by chemical laws, but by the rapid growth of these mysterious living creatures, which constitute the lowest order of organic existence. We treat them all with antipsorics, as the kidney worms in hogs by Arsenic.

GENUS IV.—PAROSTIA.—DISEASES OF THE BONES.

Composition of Healthy Bone.—From the researches of Berzelius, and more recently those of Marchand and Frerichs, it seems that the healthy bones are composed of about fifty-three parts of phosphate

of lime, and ten and a half parts of carbonate of lime, deposited in a gelatinous net-work of cartilage, composing about thirty parts in the hundred of bone. The remaining six or seven parts is made up of phosphate of magnesia, soda, muriate of soda, oxide of iron, oxide of manganese, fluoride of calcium. From all the analyses made it is inferred :

1st. That the quantity of lime contained in the bones of different parts of the body of the same individual, varies considerably.

2d. That the fixed salts are so much the less in proportion as the medullary canals and cavities increase, and accordingly less in the spongy bones than in those more compact. In the spongy bones the membranes and vessels which line the medullary cavities and canal are larger in quantity.

3d. The inorganic constituents increase with age. From early infancy to adult age, the phosphate and carbonate of lime increase (according to Schreyer,) from sixty-three per cent. to sixty-eight.

DISEASED BONE.—*Character and Internal Structure.*—From a condensation of the observations of Ragsky, Marchand, Ephraim, Nasse, made up by Rokitanski, the following observations are collected :

1. *Exostosis.*—A compact bony protuberance which appears as a plano-convex knob which has been glued on. It frequently exceeds in hardness and density the bony substance to which it is attached; this, from the commencement of its formation, possesses equal density, so that the very smallest miliary excrescences are as dense as the largest. They never appear spongy, but the newest formed strata soon pass into the state of ivory density. They vary in size from that of a millet seed to that of a hazel-nut; their surface is generally even. Some are also, uneven, but always smooth and apparently polished. Sometimes they grow in the form of a horny knob, and some into a more or less cylindrical form. The color of these compact knobs is white, yellowish white, often whiter than the bone from which they grow.

2. *Spongy Exostosis.*—A tumor of cellular texture, filled with marrow, and lined by compact lamella, as a covering. It is developed sometimes from the compact—sometimes from the spongy bone; the external covering passes into that of the bone itself. In some cases the spongy exostosis exhibits not only its spongy tissue within the compact external covering, but also a regular medullary cavity which communicates with the proper medullary tube. After the spongy exostosis has continued a considerable time in its proper structure, the mass increases, a sclerosis takes place in it, in various degrees, and to various extent; it acquires a compact external covering of considerable density by a stratum of spongy substance, or a regular medullar cavity is enclosed; it becomes also equally compact to a considerable depth in

several places, and in some cases through its whole extent. According to Valentin and Lassaigne, the quantity of phosphate of lime in an exostosis is diminished (from forty-one to thirty,) while that of carbonate of lime is considerably increased.

3. *Osteophyte*.—This can only be distinguished from *exostosis* by its appearance as a bony structure, which generally involves extensive portions of a bone, and covers it in various forms. The *osteophyte* appears velvet-like and villous when it covers the bone like a ring, or a stratum from one to two lines thick, which consists of fine fibrils and lamellæ, and thereby puts on the appearance of velvet, or of a fine felt. As it continues to grow thicker, it acquires a smooth external covering, perforated by numerous fine pores, and, at some depth it acquires a lamellated structure. Its color in the recent state is blue, rose-red, inclining to yellow, a dirty white, or of a color blending white with a silken or asbestos-like gloss. The *osteophyte* presents the splintery-leaved appearance, when it covers the bone in the form of conical excrescences or lamellæ several lines in length, which, beneath a fine, porous, compact, external covering, contain a large-celled osseous structure, or even one simple cavity. The watery *osteophyte* forms wart-like excrescences, with a broad, narrow base, consisting of a chalky, white, and very brittle substance. This is most frequently found in the hip-joint, and its arthritic metamorphosis. The *osteophyte* which appears in the form of smooth, styloid, knotty prolongations, simple or ramified, pedunculated and round, is hard, and of a thick texture. Another form of *osteophyte* appears in the form of a long mass poured upon the bone; it looks as if it had been solidified, as it were, at the moment of its flowing, with generally an even and a smooth surface; and it is also compact and hard.

4. *OSTEITIS*.—*Inflammation of Bone*.—This may arise from external or internal causes, though the latter are more particularly connected with unhealthy states of the system. It has its seat sometimes in the spongy substance.

Phenomena of Osteitis.—A moderate degree of inflammation throws out gelatinous exudation, which passes from a dark-red through the yellow-red into a reddish-white, and ultimately into a white color. In consistence this exudation passes from the gelatinous state to that of a pliant, flexible cartilage, and of a reddish white, succulent bone. This covers the old bone as a scarcely perceptible white porous growth, or as a very fine felt or velvet, and is connected internally with the bone as with the periosteum. When the inflammation is very violent, has occurred repeatedly, or is of a specific and severe character, it gives out more copious exudations of the form above-mentioned, whereby the periosteum is increased sometimes to a fibrous callous of enormous thickness, as is occasionally observed on the front of the tibia. Be-

neath the periosteum, the base of the ulceration, there is found a growth or secretion, consisting of curled or straight osseous plates placed on the bone, into the interstices of which the periosteum gives off prolongations. When the inflammation has its seat in the inner lamella of a tubular bone, the medullary cavity is narrowed by the exudation given out. A higher degree of inflammation causes a fibrinous product, or a purulent product, varying from a thin to a thick fluid, of a yellow or reddish color, or a product of a greenish, brownish, discolored and sanguous appearance. In such inflammations as run a very rapid course, the periosteum over the bone seems to be displaced, and frequently distended by pus into a fluctuating sack; in correspondence with the effusion which is poured out into all parts of its structure, the bone presents an ash-colored, dirty, yellowish, or reddish, green appearance. In case the effusion is sanguous, the surface of the bone is rough and corroded. (*Rokitanski*.)

"The bones," says B. B. Cooper, "fall more slowly into disease than the softer parts, and their restoration is proportionately more tardy; and hence it is that disease or injury to the periosteum immediately affects the bone itself, a circumstance that must be ever borne in mind by the surgeon when operating upon bones, for it is scarcely possible that any very extensive destruction of periosteum can occur without exfoliation of the bone itself." (*Lectures on Osteology*.)

Treatment.—(See p. 865, Vol. II.)—Whether the inflammation be acute or chronic, common or specific, the strict antiphlogistic regimen and counter-irritants are the usually trusted remedies. But our reliance must be chiefly on Silicea, Calc., Phos., Calc.-carb., Caust., Asafet. See also Vol. II. pp. 175, 176, 308, 321.

When the inflammation has subsided or terminated by resolution, a thickness of the inflamed bone remains for a considerable time, and the absorption of the adventitious earthy parts can be but slowly effected.

When the inflammation goes on to the formation of pus, its existence is indicated by symptoms similar to those which attend on suppuration in the soft parts. Though there are no external symptoms a correct diagnosis will be reached by observing the rigors, with increased sense of weight in the diseased part, and a remission in the severity of the pain.

In abscess the part of the bone affected soon becomes swollen, its periosteum becomes thickened, caries supervenes, and the matter is discharged by a process similar to the discharge of pus from the soft parts; but the progress and reparation are slower.

MORBID STRUCTURES.—1. *Formation of Cysts.*—The simple cyst, with serous or synovial contents, are found chiefly in the bones of the face. These, with the compound cystoids, and the acephalocysts, are

very rare. The latter have been seen in the humerus, tibia, os-ilium, and in the deploë of the thigh bone. Rokitanski describes a specimen preserved in the Vienna collection in which the left os-ilium was changed into a serous sack as large as a man's fist; and this was filled with numerous pieces of bone of different sizes, adhering to the inner wall of the sack, and with *echinococcus* cysts, some being the size of a millet-seed, some that of a nut.

2. *Fibrous Tumors*.—These sometimes grow to a large size, and in doing it distend the bone to a cyst, or crush it in such a manner that dismembered fragments of bone are found in the substance of the tumor, one part being separated from another. The structure of the fibroid is sometimes thick, sometimes loose, white and elastic.

3. *Enchondroma*.—This occurs more frequently in the bones than other parts, and is most common in the bones of the fingers, toes, ribs, and sternum. It continues like the permanent cartilages for a long time, even during life in its original state; in some cases it becomes ossified; sometimes it is attacked with inflammation from the surrounding soft parts, and then it often suppurates. (*Rokitanski*)

Osteoid.—This is characterized as a bone developing itself from an ossifying cartilaginous element of new structure in the old bone, in the form of a round tumor which is distinguished from the normal bony structure by a different elementary texture. (A case of this disease given by Simon, *Med. Chir. Rev.*, Jan. 1844, p. 97.) Lastly, among the morbid formations have been classed the very rare affections of choleostoma, tubercle, sarcoma, carcinoma.

Osteo-sarcoma, so called from its resemblance to both bone and fat in texture, often appears in the lower maxillary bone. It begins in the periosteum, or the alveolar socket, and the bone is soon implicated. It generally occurs in depraved habits, and may be excited by extracting teeth or by other operations. As the disease advances, the tooth becomes looser and is then a source of irritation. Kœcker says it always originates in diseased roots or in the teeth, but this does not appear to be the fact. The remedy in the early stage consists in the removal of the loosened teeth, which will be sufficient. If the disease is more advanced there is no resource but in extirpation.*

5. SOFTENING OF BONES.

OSTEOPOROSIS.—An excessive development of the marrow, or of the tissues which fill the medullary canals and cells of the bone, causes an increase of volume of the bone by rarifying its tissue. The parietes of the dilated interstices of the bone are so much attenuated that gaps

* U. S. Med. Surg. Jour., March, 1836, p. 336.

or chasms take place at length in the interior and in the external covering, whereby the cavities in the bone enter into communication with each other. The higher the degree of the disease is, the more soft, porous, and spongy the bone becomes, until it yields to the pressure of the finger, and is easily cut with a knife; its spaces become filled with a dark-red medulla which collects in great quantity, and is soon transversed by dilated vessels.

First form of Osteoporosis—Osteo-Malacia.—In this disease the bones diminish in size, and the change consists in osteoporosis with atrophy, a soaking of the bone in fat, and in a reduction of the bone to its cartilaginous element. In this cartilage the bony corpuscles appear empty, the lamellar structure has disappeared; at the same time the cartilage undergoes a peculiar change in its chemical composition, as the general extract obtained by boiling is distinct, both from chondrin and from gelatine of bone. (*Rokitanski.*)

The chemical changes that occur in the composition of the bones in rickets and osteo-malacia are about the same. The earthy salts are very much diminished; and at the same time five or six times the usual quantity of earthy phosphates is found in the urine. Berzelius showed that phosphate of lime is dissolved rapidly by lactic-acid. As in scrofula and in scrofulous bones an excessive quantity of acid is generated in the prima-viæ, it may be that more acid reaches the circulation than in health, and becomes the cause of the solution of bone-earth in the bones. When the quantity of alkaline salts in the blood is too small to saturate the acid, the bone-earth becomes dissolved. This idea may be applied in the treatment of rachitis by a suitable antacid diet, avoiding the articles that form lactic-acid; as sugar starch, and gum. (*Marohand.*)

Softening of the bones in adults is the result of a specific disease; and is either caused by some specific dyscrasia, different from all others, or from some of those well known, as scurvy, syphilis, rheumatism, or of the more terrible vice of the constitution called carcinoma. It seems that in every case of osteo-malacia, before the softening of the bones is observed, some of the above psoric affections have been manifested.

Osteo-malacia begins with deep-seated pains in the bones, progressing slowly. In some cases it is only fully developed in many years, even twenty or more. In general, it does not begin in all bones at once, but by fractions only of individual bones; and it does not progress, like rachitis, from below upwards. Before it is far advanced, some bones are alone involved; and some portions of these will be softened, in direct contact with other parts of the same bones. Many instances have occurred of this in patients suffering from cancer of the stomach, breast, or uterus.

DIAGNOSIS.—This disease is essentially different from rachitis. In the one the osseous tissue is truly softened as if carnified in places, and it no longer retains anything of the consistence or the texture of the healthy bone; it is as if one had poured upon the seat of the softened part a powerful liquid, having the property of at once dispersing every trace of the cellular matter completely, so as to leave nothing but a fibro-cartilaginous, or even fleshy net-work, presenting here and there layers of areola like the venous sinuses of the liver; this net-work is sometimes of a yellow or rosy hue, sometimes reddish or of the color of wine-lees, always elastic, very easily cut with a knife, but sometimes incrusted as it were with some other portions of the sound tissue. This circumscribed state of the disease is far from constant; at a more advanced period it often happens that the skeleton partakes of the softening, and, as appears from many reported observations, there no longer remains any appearance of the primitive organization of the bones. The termination of osteo-malacia, which is always unfortunate, adds another distinguishing trait between it and rachitis.

TREATMENT OF OSTEO-MALACIA OF ADULTS.—In the treatment of this affection, regard must be had to the predisposing and exciting causes.

Cases resulting from constitutional syphilis will require Mercurius hydriodicum, Kali-hydriodicum, Mercurius-solubilis, Phosphorus, Calcarea-phosph., Mezereum, Graphites, Iodine, Calcareo-curb. Here also the higher attenuations must be selected, if we would secure successful results.

In all cases of softening of the bones, those articles of food must be selected which abound in lime, phosphorus, and other normal constituents of the bones. When the disease occurs in children, the use of the unbolted flour of the cereals, like corn, wheat, rye, oats, &c., are of the highest importance.

Second Variety—*Rachitis—Rickets*.—In this disease we have an osteoporosis, with the anomaly of a reduction of the bone to its cartilaginous element, with or without a disturbance in the chemical composition of the same; the bones are, accordingly, not brittle, but easily bent; they are subject to curvatures, are liable, not exactly to fractures, but to cracks.

In rachitis the bones appear swollen, the angular shafts of the long bones becomes round, cylindrical; the articulations of the same, and the broad bones, as those of the pelvis, become unusually thick. The texture of rickety bones is affected: *First*, with osteoporosis, accompanied with an increase of volume. In this case, a pale, yellow, reddish jelly is effused into the dilated canals and cells; the vascular bone appears dark-colored and somewhat red; and this state sometimes goes so far that the cells of the spongy bone, and those in the

interior of the medullary tubes, run together into a larger cavity in consequence of the excessive distention of their parietes, and entirely disappear.

Secondly. The bone sometimes become so poor in the amount of its fixed salts, that it becomes entirely reduced to its cartilaginous element, and comes to resemble a bone treated with acids; the long corpuscles are empty; the lamellar structure is obliterated in some places, and in other places the lamellæ have apparently receded from each other, and the long corpuscles between them are almost enveloped by them.

The principal remedies for these affections of the bones, are, Calcarea-carb., Phosphorus, Calcarea, Hypo-phosphite, Silicea, Hepar-sulphur.

These remedies must all be prescribed in the higher attenuations, or very little benefit will result from their use. From much experience we have arrived at the opinion that highly dynamized medicines alone, are capable of arresting the progress of this class of maladies, and ultimately affecting cures.

When these remedies are expertly selected, and the doses are repeated at long intervals, the most astounding curative effects are often observed.

6. RACHITIS.—RICKETS.

GENERAL OBSERVATIONS.—I. Rachitis is peculiarly an affection of infancy, characterized by alteration or perversion and also suspension of the process of development and of reparation of the organism, particularly of the osseous system.

II. The progress of rachitis as an affection of the skeleton comprises three distinct periods.

1. That of incubation.
2. That of deformity.
3. That of resolution or eburnation.

Each of these periods manifests its peculiar characters and alterations of the osseous tissue.

III. The existence of rachitis is manifested by four distinct orders of facts:

1. Deformity; 2. alteration of tissue; 3. arrest of development; 4. delay of ossification.

IV. Rachitic deformity is developed from below upwards; from the bones of the legs to the thigh-bones, then to the pelvis, then to different portions of the upper limbs, the thorax, and, lastly, to the spine and cranium. Deformity of any one part always implies that of the parts below.

V. Most of the rachitic bones are less developed than healthy ones,

both in length and breadth. The shortening, independent of deformity is always marked successively from above downwards. This is observed in a regular series. In any given case, if we know the dimensions of a single bone, we may approximate that of all the other bones.

VI. The greatest reduction of the inferior compared with the superior members, establishes between these parts relations of length which repeat and perpetuate those of the age at which the malady is developed.

VII. The shortening of the bones considered in rachitic adults is a result composed of the arrest of development of the bones under the direct influence of the disease and of the consecutive slowness of its increase, subsequent to the commencement of the disease.

VIII. The texture of the rachitic bones presents entirely different characters according as they are observed during the period of incubation, deformity, or that of resolution; they differ at the beginning, and at the end of each of these periods, and are different, lastly, according to the age and progress of the affection.

IX. During the period of incubation an effusion of sanguinolent matter takes place in all the interstices of the bones, the cells of the spongy tissue, the medullary canal between the periosteum and the bone, the concentric lamellæ of the interstitial diaphyses between the joints, the epiphyses, the epiphysary neuclei, and their cells in the short and flat, as well as the long bones; in a word, in every part of the skeleton and all the points of the osseous tissue to which the radicles of the nutrient vessels are distributed. From this effusion result the exfoliation of the parts composing the tissue and the swelling and enlargement of the different portions of the skeleton.

X. During the third period, that of *resolution*, the newly-formed tissue in the long bones passes into the condition of compact tissue, and has a tendency to confound itself with the old tissue, which retains its primary hardness. This addition of the new to the old tissue gives a very great increase of thickness, and especially of width at some parts of the bones which had been the seat of the organization of the new spongy tissue of the preceding period.

XI. In rachitic consumption, which results from an aggravated degree of the disease, the unfolding and the separation of the part composing the tissue are so great that their reunion has not been effected nor the organization of the effused matter taken place. In this condition the partitions and the osseous lamellæ have continued separate and the consistence of the primitive bone has been so much reduced that its external layer is formed sometimes by nothing more than a thin pellicle.

XII. The texture of rachitic bones in adults, when the disease has been partially dissipated, presents a compactness and hardness superior

to that of the healthy state. In this state, which we call rachitic *eburnation* or resolution, one can no longer discern any trace of the union of the elements of the old with the new bone.

XIII. The deformities of the spine, which happen towards the age of puberty, and all those which have not been preceded by deformities of the inferior limbs, are not of the rachitic nature.

XIV. Rachitis is an affection essentially different from scrofula or from tuberculous affection of the bones, as well as from every species of *softening of the bones observed in adults*; for this latter affection *osteo-malacia* must be exclusively reserved.

Table exhibiting the ratio of dimensions of the limbs of a wellformed, as contrasted with a rachitic female:

Healthy Adult Female.*	Radius and Humerus. 18.10 inches.	Femur and Tibia 27.6 inches.	Ratio. as 1:1.47
Rachitic Female.	15.7. "	21. "	as 1:1.85
In healthy children, from 1 to 3 years old, the relation of the upper to the lower limbs are: 9 in. 2 lines.		12 inch 3 lines.	as 1:1.34

Preparations of Lime and Soda, in sensible doses, have been commended as expediting the union of diseased and fractured bones. Experiments by Milne Edwards and others, however, have proved that union occurs sooner without this practice than with it.

In rachitis Phosphate of Lime has been tried. The result of Mr. Mourie's experiments showed a mortality of one-sixth among seventy-one children under one year of age. According to official statistics, the deaths from this malady amounted to one-fourth. In private practice the result is often better than Mourie obtained in the hospital.

Rachitis.—Case by Dr. Reisig.—1. A boy, aged three and a half years, rickets, treated by Calcarea-carb.; was almost well in ten months.

2. A boy, with angular projection of the spine, was much relieved in three months. In the course of the time he took Calcar.-carb., China, Hepar, and Assafætida.

When the malady is connected with abuse of Mercury, appropriate remedies will be found in Kali-hydriodicum, Hepar-sulphur, Calcarea-carbonica, and Iodine.

Scrofulous complications will demand Sulphur, Calcarea-carbonicum, Silicea, Phosphorus, and the Salts of Lime and Phosphorus at high attenuations.

4. *Rachitis cured by Lycopodium, by Dr. Marweg.*—Ignatz M. four years old, suffered since his birth with soreness between his thighs, so that he never yet had attempted to walk. He was scrofulous in

* Memoir of the general characters of Rachitis, read before the Royal Academy of Sciences of Paris, by Julius Guerin, M.D.

the highest degree. *Never had the slightest desire to drink.* Between three and four P. M., irritability of the whole nervous system, with crying spells, on account of pain in left ankle. I found here the bones softened and discharging a saffron yellow water, with tendency to suppuration. His face was literally covered with freckles. Every thing tasted to him salty. I ordered cold water ablutions at bed time, and internally Lycopod 30, five pellets twice a day on the tongue for four days, followed by Lycop. 12, three drops in six ounces of water, every four hours a teaspoonful. The secretion between his thighs increased for the first few days, then stopped entirely, with increased urinary secretion. Improvement continued steadily under Sach-lact. and in four weeks he was able to take exercise. To increase his bodily vigor he now received a few doses Graphites 30, restoring him to perfect health.

A common feature of rachitis is curvature of the spine. Whether protuberant or lateral, it generally displaces the liver and disorders its secretions. The bile becomes defective in quantity, pale in color; the countenance assumes a sallow hue, the appetite fails and digestion is imperfect; the abdomen is tumid and painful, the bowels are obstinately constipated, and haemorrhoids are very commonly present. All of these symptoms are gradually removed by removal of the curvature. This subject has been treated of already, p. 525, Vol. II.

GENUS V.—ADIPOSIS.—OBESITY.

The adipose tissue may be diminished or increased far beyond the healthy standard.

A. ATROPHY.—Emaciation occurs naturally in very aged persons, and is hereditary in certain families, being most marked in persons of peevish, anxious irritable temper. It is commonly seen in pulmonary diseases, and all others in which the powers of assimilation are impaired or the supply of nutrition interrupted. It is a symptom of all diseases which impair the vital energies by morbidly increasing the secretions and evacuations, as in diabetes, diarrhoea, dysentery; it also results from long fasting. It is merely temporary when the causes that produce it are temporary, and occur in early or middle life; but, in advanced life, and in active, peevish, irritable persons it is likely to be permanent. In all these cases the absorption of the fatty matter is being accomplished by the veins, and perhaps, in some degree by the absorbents, more rapidly than the nutritive powers can supply it. The oily matter is found in blood in variable quantity, showing that it has been but recently taken up, and has not yet been changed by passing through the absorbent glands.

Certain substances appear to possess the power to increase the formation of adipose tissue, like Arsenic, Ferrum, China, &c., while other

articles, like Sugar of Lead and Iodine have a direct tendency to reduce the deposition of the tissue.

B. Adiposis.—*Obesity.*—Excessive deposition or hypertrophy of this tissue is common, and effects either the whole system or a part. Some persons reach the weight of 500 or 600 pounds. It is more common in childhood, and about the fortieth year, and among females or eunuchs. It is sometimes caused by excessive venereal indulgences in early life, with high living and indolence. It is accompanied by languid circulation, weak digestion, craving appetite, defective secretions and excretions, indisposition to perform mental or physical labor, and is often hereditary. The extent to which obesity may exist without being regarded as a disease varies in different constitutions. Ordinarily fat forms one twentieth part of the body.

It is promoted greatly by a full diet containing fatty substances, as sugar, spirituous and malt liquors, used freely by persons whose vital energies are diminished, at the same time that the appetite remains unimpaired, or is excited by stimulating drinks; the formation of chyle into blood does not take place so rapidly nor so perfectly as in health; a large portion of the oily matter of the chyle is deposited in the adipose tissue, which thus becomes one of the emunctories of the frame; and a material which cannot readily be carried out of the circulation by any other organ is set apart for the purpose of future absorption and nutrition, as the wants of the system may require; thus preventing its hurtful accumulation in the circulating fluid. In many persons apparently healthy, the excessive accumulation of fat is often one of the earliest and most remarkable signs of diminution of the vital energies of the frame.

Persons who become very fat have proportionately small arteries; they bear no losses of blood, breathe imperfectly, are dull and sleepy; and are highly susceptible to atmospheric influences. They sweat easily, take cold often, and are predisposed to gout, apoplexy and especially to dropsy. They are great sufferers from dyspepsia; and having little muscular power, they cannot take the necessary amount of exercise. As the adipose tissue enlarges still further it encroaches on every other structure. The blood is lessened in quantity and more and more diluted. The increased size of the body increases the demand for more blood to fill the distant enfeebled capillaries: and the deficient supply with the diminishing power of the circulation causes atrophy of important organs. In some cases there are dilatations, fatty deposits in the heart, or other degenerations of its structure. The heart, instead of becoming stronger by the large addition to the size of the body is really weakened in muscular power by the imperfect aeration of the blood; and yet it has the extra labor thrown upon it of propelling the diluted blood to the remotest extremities and surfaces

of the corpulent body. The balance then between the systemic and pulmonary circulation must be destroyed, the lungs becoming also unequal to the task of excreting such an excessive quantity of carbon beyond their natural capacity. The blood then becomes continually more venous, more liable to form congestions, and to dilate the cavities of the heart by its retarded pace.

TREATMENT.—The selection of a proper diet is the first thing to be considered. It is proposed to restrict the patient not only in *quantity*, even though it be admitted that this restriction alone is never effectual in diminishing the superabundant fat; but we may gain something by making such a selection of articles as may give the necessary amount of support, without a proportionate addition to the adipose tissue. Thus mutton is easily digested, and contains but a minute amount of fat, while beef is infiltrated with fat throughout the leanest parts. Other articles then best suited for corpulent persons are cod-fish, haddock, whiting among fish and the flesh of rabbits among animals.

Acids.—Vinegar is said to have the property of removing fat or preventing its accumulation. It has been used in large draughts, and in some cases with success. Thus it is said that a Spanish general who was excessively corpulent diminished the amount of fat so rapidly by drinking large quantities of vinegar "that he could wrap the skin around him like a cloak." But this course has not succeeded with others. It is complained that the strong acid produces dyspepsia. For some persons the remedy is a good one, but it cannot in them be used with safety in quantity without being greatly reduced in strength. When used in quantity, in full strength, it inevitably causes a medicinal aggravation, or poisonous symptoms. It is only when it is taken to the extent of causing uneasiness, cramps, colic, and gradually destroying the texture of the stomach and its digestive functions that vinegar causes emaciation.

Ammonium-muriaticum.—The following case is given in Frank's Magazine: A man aged 50 years, of middle stature, large head, broad neck, and a face increased in breadth by a large mass of fat hanging beneath the skin; and a fatty mass extended from one ear to the other. His small ears were pushed forward and outward by fatty enlargement. The eyes and face were sallow; cheeks lax, and hair thin. The bony frame was delicate; hands and feet small and thin; arms and legs scantily nourished. But on each arm was a large mass of fat, commencing at the deltoid muscles, passing over the shoulders to the nape, forwards upon the chest, and filling the arm-pits. The abdomen was flabby and protuberant; the nates extremely large.

He was treated with Mur.-ammonia for six weeks, when the drug disease of "the seven-day fever" was established, and continued to recur on every succeeding Thursday. After every paroxysm of the

Bromide of Ammonium (Oude) five gr twice daily.

seven-day fever the diminution of the fatty swellings was too evident and remarkable to admit of doubt, while the improvement of his general health was equally striking and satisfactory.

Hydriodate of Potassium is one of the best proved remedies in all hypertropic diseases.

MALFORMATIONS.—The greatest evil of psora is that it reproduces itself and descends to posterity. The children of psoric parents are born with some of its manifestations. Thus:—*Malformations*, as tumors on the head, yellowish, sallow color of the skin; head too large; phthisical conformation; itch eruptions; they are liable to scald-head, &c. Towards the end of the 15th century psora culminated in syphilis, since the appearance of which lepra has nearly disappeared, though it still remains in a few countries. (See *Lepra*.)

GENUS V.—PHYSICAL DEFORMITIES.

CRETINISM.

We have already spoken of this terrible infirmity of human nature in its relations to imperfect development of the mind; it is proper to refer to it here as a *physical deformity*. The cretin is a blighted specimen of humanity. His stature is not more than four or five feet, often less; the head is deformed in shape and is too large for the body; skin yellow, cadaverous, or of a mahogany color, wrinkled, pallid, or marked by eruptions; the flesh is soft and flabby; the tongue large and often hanging out of the mouth; the eye-lids thick; the eyes red, prominent, squinting; the countenance is void of all expression except that of idiotism; the nose is flat, the mouth large, gaping, and constantly permitting the saliva to flow over the elongated lower jaw. The abdomen is pendulous, the limbs crooked, short, and so distorted as to prevent any but a “waddling” progression. The external senses are often imperfect,—many are deaf and dumb,—and the whole aspect presented is that of premature old age. Such is the disgusting physical exterior of the apparently wretched, but, perhaps, completely happy cretin.

His moral picture is still more humiliating. The intellectual faculties are suspended, while the lower animal propensities are in a state of increased activity; thecretins are voracious eaters, and addicted to the lowest animal passions. Their chief pleasures are to eat and sleep; or, after eating, to bask in the sun, insensible to every stimulus that agitates the mind of savage or civilized man. “Goitre, on such a scale as we see it in the valleys of the Alps is bad enough, but cretinism is a cure for the pride of man, and may here be studied on a large scale and in its most frightful colors.” (Johnson, on *Change of Air*.)

TUMOR.—*A Tumor on the Face.*—Case by Dr. Kenyon, of Buffalo.—It began with a pimple in the middle of the forehead, where the skin had been broken by a scratch. It looked like a watery exordcence and bled when touched. The lady was of light complexion, nervous temperament, had never been sick much, no hereditary disease perceptible.

She took Thuja 6° in the morning; Thuja 30° in the evening. Next evening Thuja 200°. And afterwards one dose Sacchar.-lact. each evening. In one week it ceased bleeding, and was diminished one-half its size. In two weeks all trace of it was gone, no spot left where it had been.

Wens are considered endemical in certain regions, generally mountainous, as Switzerland, Bohemia, and the Pyrenees in Europe, and the Andes in America. Dr. Guyon publishes the history of the family of a Belgian consul, who went from Lima to Santiago, in Chili. When they had been there fifteen months, it was observed that the two daughters (aged 11 and 13) presented incipient wens growing upon their necks. The physicians of the country unanimously advised change of climate; and the mother embarked with the children for Europe. The voyage was protracted to 110 days, during which time they suffered much from sea-sickness and change of temperature in passing from the latitude of Cape Horn to the Equator. The children acquired the habit of passing their hands over their necks, and soon perceived that the tumors were visibly decreasing. When they reached Cherbourg they were half gone; and by the time they arrived at Brussels the last vestiges of the affection disappeared. It seemed to be a common prescription of the physicians of Santiago, as one known to be efficacious. Dr. Guyon says, a considerable number of Swiss emigrants, from the Valois, in 1853, settled in Algeria. Of these the most, especially the women, had wens. But they had not been a year in the country before they became aware of a considerable decrease in the size of the wens; and by the end of 1856 they had all disappeared. We suspect these wens were of a goitrous character.

Tumor of the Face, caused by Aneurism of the Arteries.—Mr. Ferguson gives a case in the *Lancet* for 1842-3: A lad, aged 19, had a tumor about the size of a duck's egg, on his cheek, which the surgeon supposed to be a cyst. Mr. Fergussen, of King's College Hospital, proceeded to remove it, "but was greatly astonished to find that it was supplied with numerous large vessels, and that it had many of the characteristics of the formidable disease called aneurism by anastomosis." He applied ligatures as speedily as possible, with the double object of arresting the bleeding and causing the tumor to slough away. (*Practical Surgery*, p. 147.)

ORDER II.—DISEASES AFFECTING EXTERNAL SURFACES.**THE SKIN.—DERMIS.—CUTIS.**

The skin, though apparently a simple membrane, is in reality composed of several different laminae or layers, one within another. The outermost lamina is termed the *scarf skin* or *cuticle*; the second has the name among anatomists of *rete mucosum*. After these two are removed, we come to the outer surface of the *cutis* or *true skin*.

The application of a mild blister to the skin of a negro, for a few hours, raises the transparent gray cuticle from the layers beneath; and under it we find a clear serous fluid. On removing the scarf skin and the fluid, the surface beneath appears black. The black surface now consists of the *rete-mucosum*, a double membrane, the lower lamina of which is gray and transparent, and the appearance of a black web, resembling the *pigmentum nigrum* of the eye. The *rete-mucosum* gives the color to the skin; is black in the negro; white, brown, or yellowish in the European. It has been supposed that the design of Nature in giving the black skin to the negro has been to defend him against the tropical rays of the sun; and the purpose of a similar membrane behind the retina in the eye, appears to be not only that of absorbing the superfluous rays of light, but like the *amalgam* behind the looking-glass, it may enable the retina to reflect the rays, in order to perfect vision. In our own climate the skin becomes brown when exposed to the rays of the summer sun,—a process which seems also designed to defend the body against the access of too great external heat.

Functions of the Skin.—Regarded as a protective covering, the skin possesses the united advantages of toughness, resistance, flexibility, and elasticity. The areolar frame-work of the *cutis* is the part chiefly conferring these properties, but they are also due in some measure to the *epidermis*. These structures are thickest on all the points in which the skin is liable to come with most force and frequency into contact with external objects; thus they are thickest on the palms of the hands and soles of the feet, on the back of the trunk, and on the outer surface of the limbs; thinner on the front of the body and on the inside of the limbs.

The skin is employed in the two opposite functions of *absorption* and *secretion*. Absorption is performed by the net-work of lymphatics and the minute capillaries. Secretion is carried on at every point of the surface of the *cutis*; whilst the *cuticle* is merely a deciduous product which is constantly in course of separation from the *cutis*. But

the principal agents in secretion are those glandular offsets from the skin which lie scattered in numberless multitudes beneath it. Thus the actual circumference of the internal surface of these secreting glands exceeds in extent the surface of the whole body; and the quantity of the waste material which it is their province to eliminate from the body is enormous. And this immense glandular structure is widely distributed over the whole external surface; and thus, more than any more compact glandular structure, it is subject to the vicissitudes of external temperature, acting upon the cutaneous blood vessels; therefore, general health would be much more frequently deranged than it is if a coördinating apparatus far within the body had not been provided in the kidneys. Thus, when the secreting function of the skin is imperfectly performed in a cold day, the kidneys arouse to an extra degree of activity, and throw off from the blood an increased quantity of the excrementitious materials, the presence of which the system can no longer tolerate.

The Sebaceous Glands of the skin are chiefly employed in the protection and health of the skin itself; and, like the sweat glands, they are widely distributed over the whole surface. On most portions of the body they are as abundant as the hairs themselves; and they are employed in eliminating from the system hydro-carbonaceous matters, which pass off in the form of an oily material which serves the purpose of lubricating the surface of the cuticle.

Finally, the skin performs the essential and important office of furnishing the surface on which is extensively expanded the peripheral extremities of the nerves of sensation, thus constituting it the *organ of touch*. The contact of foreign bodies is perceived as occurring at the point at which they actually strike the organ of touch, whether that point be within the sphere of operation of any other sense or not; and this perception is transmitted to the brain through the nerves as received. In general, touch is most acute in regions best suited, by their structure, for easy and diversified contact with external substances; for the power of nicely determining the position, direction, and amount of pressure upon the organ of touch is essential to the perfection of the sense. The experiences of a life-time teach the will how to excite and check the contractions of the muscles, and to regulate their force and duration with wonderful precision. We also possess a *muscular sense*, through which the mind is able to appreciate the state of contraction of a muscle by impressions originating in the nerves supplied to its fibres. This power, both of recognizing and governing the muscular movements, is from our earliest infancy brought into association with the impressions derived from the organ of touch, and made subservient to the faithful performance of its function; "and the perfection to which habit brings the sense of touch is chiefly due

to an improved capacity it confers of appreciating the impressions made on the organ, in connection with the niceties of muscular movement."

Minute Cryptogamic Parasitic Plants in their Relations to Diseases of the External Surface.—Nearly all the diseases to which plants are subject are the result of encroachments by parasitic mushrooms, fungi, or lichens, and every species of plant, in a diseased state, presents us with some minute specimens of this order. Wheat is infested and greatly injured by the *rust*—a highly-organized fungus, called by the botanist *uredo linearis*—and by that called *smut*, or *uredo segetum*. Blight, dry rot, and all the fungi that retard the growth of trees and plants are of this character.

The rapidity with which the fungi reproduce themselves, and spread over objects which furnish the proper food for their development, constitutes one of their most remarkable features. Some species "pass through their whole existence in a few minutes, from the invisible spore to the perfect plant."

The number of known species of fungi is so great that their number has never been estimated. Fries, the Swedish naturalist, counted two thousand species within a space equal to one-eighth of a mile square; and he also estimated ten millions of sporules "in a single individual of the *reticularia-maxima*, so minute as to look like smoke as they rose in the air. Webster says, in his History of Epidemics, that during the prevalence of a malignant fever, in 1795, sound potatoes were destroyed in his cellar in the space of thirty-six hours. They were overrun and pervaded by the parasitical fungi which were rapidly diffused through every part. The peculiar state of the atmosphere favored the development of the germs, which were furnished from an unknown source. He also says, that during the pestilential season of 1798, "he saw a cotton garment covered with dark-gray colored spots of *mildew* in one night; and that such cases were then common." An instance is given in the Philosophical Transactions, in which a split melon was observed to be rapidly pervaded by "a green mould, which required only three hours to sprout, six to ripen, and produce, and let fall new seeds." The Sanitary Commission of Liverpool reported in 1844, that in the dwellings occupied by the poor, the impurity of the air was so great that "food became tainted in a single night."

When we descend to examine the vegetable productions of the smallest size, the microscope shows them in visible growth. A drop, of yeast, placed in the bottom of a watch-glass, may be seen swelling up, as the *tortula cerevisiae* unfolds itself, and exhibiting a forest of fungi, where, but a few minutes before, only a spore or two were visible.

The exact process by which the yeast-plant propagates itself is im-

portant. The globules are rather egg-shaped, and, when examined by aid of the microscope, a small point may be seen on the surface of a globule fully formed, and, after some hours or more, it becomes associated with others. Sometimes several globules cluster around one of the ordinary size and whirl about with it, when the fluid in which the mass floats is shaken. In the smallest quantity of yeast a number of isolated cells are seen, and from the surface of each cell others shoot forth. These become cells like the parent, and, in their turn, originate others.

The serum of blood, when introduced into a vessel hermetically closed, is found to contain, after a few days have elapsed, a large number of yeast cells, probably produced from the grape-sugar dissolved in this liquid; yet this same serum, when examined with the microscope immediately after coagulation, did not contain a single nucleus or cell.

Every globule of yeast, as well as each individual spore of all the microscopic fungi, is perfect in itself. It absorbs its food from every part of its surface, assimilates it, and respires the air as perfectly as the highest flowering plant. When the fermentation is going on, "the small globules of yeast become agitated in all directions;" small protuberances shoot out on all sides, which grow to their full size and separate from the parent plant. It is believed that there is, in this process, a truly *vital* reproduction, like that of buds in the vegetable kingdom.

The substance known as *leaven* furnished the most ancient nations with the simplest mode of making light bread, and it is still in general use. When bread remains unbaked in a warm place for a very short time, it speedily acquires a sour taste, and the microscope reveals a forest of small *fungi*, resembling those that constitute yeast, and equally capable of reproducing themselves. This is really the first stage of putrefaction.

The peculiar plant called *mould*, or *mucor stercorea*, consists of a true and highly-organized microscopic plant. It may be seen with a magnifying glass on the surface of all putrefying vegetable or animal matter, and the plants soon become visible to the naked eye. They possess the root, stalk, flower, and all the essential parts of the perfect plant.

Mildew and blight consist of minute parasitic plants, of which the seeds are so small that they can enter the pores on the straws of wheat, which are open in hot weather. In warm, showery weather, each pore upon a straw may produce from twenty to forty of these poisonous parasites. They may rapidly be distributed over a whole field from a few diseased plants, as the seeds are not much heavier than the air. In the growth of these small parasites, and in that most minute aerial

fungus called red snow, or gory dew of the Arctic regions, we see the development of vegetable life in its simplest form, and discover the first steps of advance in organic structure.

CLASSIFICATION OF CUTANEOUS DISEASES.

- I. Secreting diseases. a. *Serosity*.—Eczema; Pityriasis rubra acuta; Eczema lichenoides.—Scabies (gale.) Herpes phlyctenodes, Pemphigus.
 - b. *Purulent Serosity*.—Rupia, Ecthyma cachecticum.
 - c. *Pus*.—Impetigo—Acne scabies (gale.) Ecthyma; Sycosis.
 - d. *Fatty Matter*.—Acne sebacea,—Acne punctata.
 - II. Non-secreting Diseases. f. *Transitory redness*, (*i. e.* disappearing under pressure of the finger).—Erythema. Urticaria.—Roseola.—“Couperose erythematose.”
 - g. *Permanent redness*. Purpura; Scorbutus.
 - h. *Redness with a Papular State of the Skin*.—Lichen. Strophulus.
 - i. *Circumscribed redness with furfuraceous Scales, and fretted state of the Skin*.—Herpes circinatus. Herpes nummularis.
 - j. *Diffused Redness with a furfuraceous State of the Skin*.—Pityriasis rubra.
 - k. *Redness with Scales and Induration of the Skin*.—Psoriasis.—Lepra vulgaris.
 - l. *Scales without Redness*.—Ichthyosis.
 - m. *Papulae without Redness*.—Lichen chronica. Prurigo.
 - n. *Vegetable Productions*.—“Favus or Tinea; Favus scutellata; F. Lupinosa; F. Granulata; Porrigo decalvans; Herpes tonsurans.
 - o. *Animal Productions*.—Pedicular disease. And that which originates the pulex or flea.
- A. In *scabies* the serosity is contained in minute isolated vesicles. In *herpes phlyctenodes* it is within bullæ, that are either distinct and separate, or are situated so near to each other as almost to touch. In *Pemphigus* the bullæ are still larger.
- B. *Eczema impetiginodes* is the only disease in which the secretion is partly serous and partly purulent at the same time. The product of this secretion is a crust of a yellowish-gray color.
- C. In *rupia* and *ecthyma cachecticum* the secreted matter is partly purulent and partly sanious. In the former, the crust that is subsequently formed, has an ill-favored appearance—being formed of pus, ichor, and blood—and is more or less irregular in its form. In the latter, the crust exhibits the same characters, but it rests upon an in-

flamed base, and retains the rounded shape of the pustule which preceded it.

D. *Impetigo* is the most common and important among the cutaneous diseases in which pus alone is secreted. Its crusts are always purulent, superficial, and of a gold-yellow color, resembling concrete honey.

Acne.—The pustules are hard at the base, and elevated; in purulent *scabies*, they are flat and more uniform.

In ecthyma the pustules are flat and of a large size, and exhibit in the middle a dark point, which gradually becomes more and more depressed, so that at length they are umbilicated as in small-pox.

1. PITYRIASIS—DANDRUFF.

Simple pityriasis is most commonly confined to the hairy scalp, and displays itself in the form of a superficial, bran-like scurf, which may easily be removed by a comb or a brush, but which is speedily reproduced. In mild cases, and with ordinary care, the disease may continue with but slight annoyance for many years, or it may be roused into a more active and troublesome form by general debility, attacks of eruptive fever, and by the relaxing effects of a hot climate.

TREATMENT.—We consider *Sulphur*, *Iodine*, *Conium*, *Calcaro*, *Carbo-vegetabilis*, and *Sepia*, the best remedies for the above disease. *Arsenicum*, *Graphites*, *Acid.-nitr.*, *Phosphorus*, *Lycopodium*, *Natrum-mur.*, *Copaiba*, *Argenti-nitr.*, *Aurum-mur.*, and *Hepar-sulph.*, have likewise been employed with success.

Administration.—The first, second, and third attenuations should be employed—a dose each day, until the morbid action is subdued.

2. TINEA CAPITIS.—SCALD HEAD.—*FAVUS SCUTELLATA*.

A cutaneous disease characterized by small ulcers at the roots of the hairs of the head, which produce a friable white crust.

DIAGNOSIS.—Circular red-colored patches covered with numerous small yellowish points or pustules appear on the skin, but do not rise above its level. These pustules soon break and form thin scabs. The patches frequently unite with adjacent patches and assume an irregular form, and extend, in some cases over the whole head. The incrustations accumulate and become thick and hard; when removed, the surface beneath is left red and glossy, but studded with slightly elevated pimples. When the eruption continues long, the hair is entirely destroyed. The disease is more common in children between the age of two years and that of puberty. It is worst on the scalp; but it appears on, or extends to other parts of the body.

PATHOLOGY.—*Tinea capitis* is characterized by small ulcers at the

roots of the hairs of the head, which produce a white crust. M. Gruby submitted this white crust to inspection under a powerful microscope, and found that "tinea consists of millions of mycoidermatous plants. They spring from an amorphous mass of which the periphery of each capsule is composed, and give off towards its centre oblong or rounded homogeneous corpuscles which are the reproductive spores." The seat of these vegetations is in the cells of the epidermis. The cutis is compressed, not destroyed, and the bulbs and roots of the hairs are only secondarily affected. Dr. Bennett, of Edinburgh, found cryptogamic plants of extreme minuteness growing in the matter of tubercle found in the lungs of different persons suffering from disease of those organs. Similar growths have been seen growing on the skin of a mouse, and also on that of a living gold-fish, which was in a languishing state some time before death. (*Medico-Chir. Review*, April, 1844, p. 458.) Vegetable parasites have been observed growing in various parts of the human body and in fluids ejected from it. Bennett found them growing on the coating of the tongue, and also on the gums in yellow fever. Berg examined the crusts on the surface of the tongue and mouth in aphthæ of children, and found them composed of the fungi called *favus*. Bœhm, Cawdill, and Rusk found the same parasite in the intestinal canal of cholera patients. Others have found them in the scales which compose the chief part of the mass which forms the crust in porrigo. The same vegetable growth has been observed on blistered surfaces, on the inside of the œsophagus, in ulcers of the intestines in *typhus*, and in various cutaneous eruptions. They have been seen in a cerebral tumor in a boy, in a chronic ulcer of the leg, in a scrofulous affection of the ear, in carious teeth, in expectorated matter in pneumonia, in the stomach of an icteric subject in yellow fever, and in a large number of other diseases. (*London Jour. Med.*, Nov., 1849.)

TREATMENT.—The chief homœopathic remedies are: *Rhus-tox.*, *Staphysagria*, *Dulcamara*, *Bryonia*, *Hepar-sulph.*, *Arsen.*, *Antim-crud.*, *Calcar.-carb.*, *Sulphur*, *Graphites*, *Lycopodium*.

Clematis-erecta.—Hahnemann prescribed it with success in the exanthemata with serpiginous crusts, especially *papula*, *acne*, and *sycosis*; also, in pustular diseases. Hirschel succeeded with it in eczema, impetigo, the bullæ, ecthyma; and Leon Simon in malignant tetter. (*Scrof. Diseases, Archiv.*, Tom. VI, p. 448.)

Jahr (*On Diseases of the Skin*) says: "Clematis is useful principally in the dermatoses produced by solar action, in those characterized by an inflamed condition of the skin; in hypertrophy of the dermis, in the bullar variety; in cutaneous affections accompanied with emaciation; in psoriasis; psoriasis inveterata; psora palmaris and plantaris; in chronic discharging eruptions, particularly of the legs; in psora,

ompliated with small ulcerations; in impetigo-figurata and phagedenic tetter. Generally *Clematis* will be indicated if there be a scaly crust upon the thigh, from which exudes a yellowish, ichorous and corrosive humor, and resting upon a red and excoriated base, discharging, and covered with numerous vesicles, which increase, and the discharge from which forms new crusts, attended with intolerable itching, emaciation and enlargement of the inguinal glands, redness and tumefaction of the skin, and scabby pustules all over the body. At the increase of the moon the eruption is red and moist; and at its decrease pale and dry."

Störck should, moreover, not have been astonished that he was able to cure a general chronic eruption, (humid, phagedenic, and psoric,) with *Clematis*, having himself ascertained that this plant has the power of producing a psoric eruption over the whole body.

Acetic-acid.—Apply the acid diluted with three times its weight of water to the skin, in all the most diseased patches, for three or four minutes. A single application is sufficient in a majority of cases. A crust grows up with the hair, which may be removed with scissors, when they can be put under it.

Bœnninghausen says it is dangerous to treat these eruptions simultaneously by the same remedies applied both externally and internally. The external part is superfluous, and often leads to a false cure or obscuration of the external and often most important symptoms.

In cases like malignant tinea capitis, the symptoms are generally few, and those derived from the anamnesis or constitutional dyscrasia are deserving of special attention; consequently it is necessary to give occasional doses of Sulphur or Thuja, or more rarely Mercurius.

Viola-tricolor.—A case resembling tinea capitis in an adult: eruption of numerous conical but distinct cones, as large as a split pea, but more prominent, confined to the scalp. On removing a crust, there was a yellowish or watery deposit beneath; crusts have a dark reddish base; eruption, itching and irritation very disagreeable. *Viola-tricolor* 12th for seven or eight days, then *Viola-tricolor* 6, for a week more. There was then scarcely a crust left; they separated from the skin, leaving only a red mark behind, which soon disappeared. (Dr. Pomeroy, Detroit, Mich., *Am. Hom. Rev.*, Vol. III., p. 32.)

The most common diseases seen on the scalp of young children are: 1. *Eczema*; 2. *Impetigo*; 3. *Eczema Impetigoides*. The last having relations to both the preceding.

1. *Eczema* is the most common between the ages of three or four months, and two or three years, or during the period of the first dentition, and is by many considered salutary in its influence, the child appearing well the whole time, and suffering if cured soon. It may stop of itself, seldom causes the hair to fall off, and never permanently.

The eruption consists of a common inflammation of the vessels of the part, which may continue for an indefinite period, but never propagates itself by contagion. It may be traced to common causes of disease. The same applies to Impetigo and Eczema Impetigoides.

In *Eczema*, the serous secretion oozes from a red surface, by myriads of little canals or openings, in the form of minute drops, or fine moisture.

In *acute pityriasis* the serous oozing is a sort of sweat, but without any perceptible punctuated state of the skin.

In *Eczema-lichenoides* the serosity proceeds from a rounded patch, which is sprinkled over with a multitude of papulae that render the surface somewhat rough. The discharge is exhaled between the papulae.

Crusta-lactea—*Milk-scall*.—*Milk-crust*.—An affection of children, characterized by an eruption of numerous small, white pustules, appearing in clusters upon a red ground, full of a glutinous liquor, which form white scabs when they are ruptured. The pustules generally appear first on the face, especially cheeks and forehead, from whence they spread over other parts, sometimes involving a large portion of the surface of the body. There is redness and swelling of the surrounding parts; troublesome itching; the child is fretful, restless, rubs the affected parts constantly, thus tearing off the scabs and aggravating the disease.

TREATMENT OF ECZEMA, CRUSTA-LACTEA, &c.—*Rhus-tox.*, *Arsenicum*, *Sepia*, *Sulphur*, *Croton-tig.*, *Petroleum*, *Mezereum*, *Calcarea-carb*, *Hepar-sulph.*, *Stibium*, *Apis-mel.*, *Lycopodium*, *Graphite*, *Cuprum-acet.*, *Podophyllum*.

Aconite.—Rash appearing in small red, smooth spots, not elevated, but visible in heat and cold; itching and biting at night, disturbed sleep, shivering in the evening, heat during the night; the child uneasy, irritable, and crying much. Redness and inflammation of the skin; the patient is feverish, restless, and uneasy.

Rhus-tox.—After Aconite has reduced the fever.

Sulphur.—After the effects of *Rhus* have been tested.

Hepar-sulphur or *Arsenicum* will be likely to cure the psoric cases which are obstinate and complicated.

Lycopodium, *Sepia*, and *Graphites*, also in tedious psoric cases.

The different forms of *cutaneous eruptions*, or the rash on the skin so common in childhood, are caused by derangement of the digestive organs, and they are curable by correcting those organs. We generally succeed in removing the internal disorder, as well as the external, by giving Cinnabar, Mercurius, Ipecac., Sulphur, or Calcarea. In critical cases, when convulsions are threatened, we may give Cuprum-sulph. Hering gives Cuprum-aceticum 3, a grain in a wine glassful of

water, every fifteen or twenty minutes, till relief is obtained. When the eruption is not well defined, when there is trembling, sickness of the stomach, faintness, or diarrhoea, Ipecac. will either correct the internal disorder, or promote the eruption in its full appearance on the surface.

Chamomilla will generally succeed in children for similar symptoms.

Sulphur is proper in most cases of this kind. The remedy that relieves generally produces perspiration.

The *London Lancet*, (March 13, 1858,) says: "That Arsenic produces a form of eczema, demonstrates that metal to possess the power of influencing the nutritive processes in the skin; and common sense would suggest that when the skin is morbidly nourished, a drug proved to have such power should be tried, in preference to one not known to act on the skin at all."

Vesicular Eruption on the Hands—Petroleum.—A woman had a vesicular eruption on both hands every winter for several years; both hands and wrists covered with vesicles on an inflamed base, with cracks here and there on the back of each hand, discharging a great quantity of watery fluid, excoriating the parts around; no appetite; no thirst; sinking at the stomach; bad taste in the mouth in the morning; rising of food. Croton-tiglum improved them; but after a month the hands remained very dry and cracked. *Petroleum*, 3°, was given twice a day. This cured the hands, and they remained well (*Dr. Clifton.*)

Rhus-tox.—Vesicular Exanthem from Injury.—Vesicles appeared on the skin, inside of the knee, seven weeks after a kick from a horse; they contained alkaline and corrosive serum: the joint which had been stiff and swollen recovered freedom of motion; painful itching continued to recur at every new moon, later, every fortnight over the face, ears, and hands. Eruption, ushered in by agitations of the limbs and thighs, itching and tingling over the whole body, persisting through the night; at one time genitals and anus painfully swollen. Face so swollen that he could not open his eyes; skin of hands had a psoriform aspect, dry and entire, excepting a few fissures; burning pains here and there, with darting itchings. A millet-sized pustule, enlarging, discharged a little and left a raw surface; for three or four weeks slight lancinating pains of face and ears, complexion slightly yellow. *Rhus-tox*, 2°; two drops every eight days for many months. The patient was cured. (*Dr. Roith's Clinique Obs.*, 1299.)

If, as asserted by Pet. Rossi, Van Mons, J. Monti, Sybel, and others, the *Poison-sumach*, *Rhus-vernis*, has the faculty of producing pimples which gradually cover the entire body, it may be easily perceived how this plant is capable of effecting a homœopathic cure of various kinds of herptic eruptions, which it really has done, accord-

ing to information furnished by Dufresnoy and Van Mons. And it would be in vain to seek amid the vast domain of hypothesis the cause that renders Dulcamara so efficacious in a species of herpes, as witnessed by Carrere, Fouquet, and Poupart. Nature, which requires the aid of homœopathy to perform a safe cure, sufficiently explains the cause, in the faculty possessed by Dulcamara of producing a certain species of *herpes*.

Acetum.—*Herpes præputialis*, venereal vegetations, &c., have been cured by the application of a lotion of Acetic-acid.

PEMPHIGUS.—*Diagnosis*.—This is also a vesicular affection, characterized by the appearance of single vesicles of large size upon the legs, and occasionally upon other parts of the body. The vesicles are filled with a yellow or straw-colored fluid, and are seated upon an inflamed, hard, and red base. This disease occurs during the course of fevers, or in old and enfeebled persons, after undue exposure to cold, or improper indulgence in stimulants, or indigestible food. “I have frequently seen,” says Macintosh, “large bullæ take place in the course of slight as well as severe fevers; but instead of considering them thereby entitled to any specific character, I have always looked upon their occurrence as an accidental circumstance, and have made no difference in the treatment of the original disease. The appearance of the vesicles is sometimes preceded by slight chills, followed by transient flushes of heat, and other signs indicative of mild constitutional disturbance. In these instances the integuments at the base of the vesicles are hard, swollen, and painful. The ordinary duration of the eruption is from one to two weeks; but in some instances the vesicles continue to appear for months.

TREATMENT.—*Sulphur*, *Rhus*, *Arsenicum*, *Dulcamara*, *Iodine*, *Acid-nitr*, and *Mercurius*.

ADMINISTRATION.—They may be employed in the same manner as advised under *herpes*.

RUPIA is another pustular affection, often resembling very closely *ecthyma*. Bateman describes it as an “eruption of flat, distinct vesicles, with bases slightly inflamed, containing a sanious fluid, the scabs accumulating sometimes in a conical form, easily rubbed off, and soon reproduced.” Although this author describes the eruption as vesicular, it is now generally conceded that the disease is for the most part pustular. The eruption may be distinguished from that of ecthyma, by the appearance of scabs and the ulcerations which frequently occur. Several varieties have been described, which we do not think necessary to specify minutely, since their general character is the same, and the eruption is sufficiently marked to enable the careful observer to detect its true nature without difficulty.

TREATMENT.—The medicines usually employed in the above com-

plaints are, *Sulphur*, *Sepia*, *Mercurius*, *Rhus*, *Antimonium*, *Silicea*, *Hepar-sulph.*, *Aurum-mur.*, *Arsenicum*, *Iodine*, *Colloids carb.*, *Dulcamara*.

ADMINISTRATION.—Attenuations and repetitions of doses, the same as in scabies.

ECTHYMA.—*Diagnosis.*—This disease originates from a morbid condition of the skin, which supervenes during the course of eruptive and other fevers, venereal diseases, scrofula, scurvy, &c. The pustules are of considerable size, seated upon swollen, bright-red, and painful bases, and never running together, but always preserving a distinct character. After a few days the pustules become covered with hard and dark or greenish scabs, which in one or two weeks dry up and disappear. Ecthyma has been subdivided into several distinct varieties on account of some trifling and unimportant modifications which the eruptions occasionally present, from peculiarities of age, constitution, disease, and habits of life. The most common of these varieties are:

1. *Ecthyma Vulgare*.—“Consisting of a partial eruption of small, hard pustules, on the neck, shoulders, or extremities, which is completed in about three days. They enlarge and inflame from pus, and form scabs. These eventually dry, fall off, and leave no mark behind. They are chiefly seen in young persons whose health has been impaired.”

2. *Ecthyma Luridum*, with pustules, “larger, more diffused, more repeated and fixed upon a hard, elevated base of a peculiar dark-red color.” (*Hall.*)

3. *Ecthyma Infantile*, occurring generally in infants of delicate or scrofulous constitutions, or in those whose systems have been enfeebled by abuse of drugs.

4. *Ecthyma Cachecticum*, peculiar to individuals who are suffering under a venereal, scrofulous, or psoric taint.

IMPETIGO.

DIAGNOSIS.—The eruption consists of clusters of small pustules, vesicular in the first instance, but soon becoming purulent. After a few days the pustules burst, and thick and dark-yellow scabs remain. The skin around the pustules is somewhat swollen, inflamed, and painful, and when the secretion from the ruptured pimples is acrid, the patient is often annoyed with an exceedingly disagreeable burning and itching sensation. Willan, Bateman, Rayer, Schröen, and several other eminent writers on cutaneous affections recognize five different varieties:

1. *Impetigo Figurata*, occurring generally in children during dentition, and in “young men and women of lymphatic or sanguine-lymphatic temperaments.” Rayer advises *Lycopodium*, *Sepia*, *Sulphur*,

Rhus-tox., *Graphites*, *Calcarea-carb.*, *Dulcamara*, and *Petroleum* in this form of the disease.

2. *Impetigo Sparsa*.—In this variety the pustules are isolated, and dispersed over the shoulders, buttocks, face, scalp, or legs. It generally “appears in the fall and winter, and disappears in spring and summer.” (*Bateman*.) *Mercurius*, *Sulphur*, *Cicuta*, and *Lachesis* will be found specific in this form.

3. *Impetigo Erysipelatodes*.—The eruption is generally a disease of the face, and bears some resemblance to erysipelas in the first instance, but soon changes to a pustular character. The scabs which form on the pustules are of a dirty-yellow or greenish color, and are kept soft by the secretion which is under them. Schröen considers *Belladonna*, *Rhus-tox.*, *Mercurius*, and *Arsenicum* the proper remedies for this form.

4. *Impetigo Scabida*.—This is a severe form, attended with more inflammation and pain in the affected parts, and more extensive ulceration and discharge than either of the other varieties. We may employ *Hepar-sulph.*, *Mercurius*, *Arsenicum*, and *Iodine*.

Impetigo Larvalis, or *Crusta Lactea*—“Common amongst young nursing children; characterized by an eruption upon the cheek of superficial, more or less confluent pustules, united in groups, attended with slight itching, and followed by yellowish and green—generally thin and lamellated, at times, however—with thick and soft crusts, that, when loosened, leave a red and inflamed surface, which is quickly covered with new crusts.

TREATMENT.—The best remedies are, *Sulphur* and *Rhus-tox.*, (*Schroen*), or *Dulcamara*, *Lycopodium*, and *Sepia*, (*Knorre*), or *Graphites* and *Mezereum*. (*Lobethal*.)

ADMINISTRATION.—In the same manner as in eczema.

Sulphur.—Dr. Guilbert, of Dubuque, says, *Sulphur* is the leading internal remedy, and is necessary at intervals, even when some one of the following is preferred: *Clematis-erecta*, *Phytolacca-decandria*, *Arsen.-Dulc.*, *Croton-tiglium*, *Conium*, or *Hepar*, but whatever internal treatment is relied on, they recover soonest under some application of the proper remedies topically.

Mercury.—*Specific effects of Mercury on the Skin*.—Pearson describes an eruption which he has named *mercurial eczema*. It is also to be observed that Calomel is a common prescription for eczema. Erasmus Wilson directs Calomel one grain with one of sugar of milk for a young infant. “After the first dose, the Calomel may be repeated according to circumstances, once a week, twice a week, every other night, for a few nights, or even every night.” (*Skin Diseases*, *E. Wilson*, p. 177.) In an attenuated form the remedy is a good one.

Mercury is proved to be homœopathic to “iritis: periostosis, paraplegia,

hemiplegia, and shaking palsy," in all of which allopathists have long employed mercurials.

4. *Crusta Serpiginosa*.—This form resembles *crusta lactea*, but is marked by the appearance of small vesicles behind the ears, which burst, forming a thin, dark-colored scab, from which an acrid fluid is secreted. The face, neck, arms and trunk, eventually become involved. For the cure of this form Schroen advises *Sulphur*, *Clematis erecta*, *Calcarea-carb.*, *Lycopodium* and *Arsenicum*.

Causes.—By many the disease is supposed to be owing to the presence in the skin of minute animalculæ of the species *acarus scabiei*. It has likewise been attributed to want of cleanliness, and the use of unwholesome food. The remedies should be given in the first or second attenuation, and repeated two or three times a day until the eruption disappears. In recent cases, Hartmann, Schroen, and Schmidt, employ the tinctures and the first dilutions; but in obstinate cases they employ from the third to the sixth attenuations.

ACNE,

Is another pustular affection, making its appearance generally upon the nose, face, forehead, and shoulders, first in the form of a thickening redness and induration of the integuments, from which eventually proceed suppurating points or tubercles. The parts affected often acquire a depth of redness and a conspicuousness which much annoy the patient. Plumbe supposes that the malady consists in a diseased condition of the sebaceous follicles, induced by excessive indulgence in the pleasures of the table, sedentary habits, &c. Sometimes it is violent, and extensive inflammation and suppuration occur. Acne consists of hard inflamed tubercular tumors of the face, neck, shoulders, or upper part of the thorax, most common in young persons, suppurating slowly or subsiding after a few days. In the simplest form it begins with small, hard and inflamed tubercles of the size of a pin's head, reaching their greatest size in eight days. They are then dark-red, smooth, prominent, shining, hard and painful; in two or three days more a small speck on the apices of some of them, shows the termination in suppuration; a thin humor flows from the surface, dries, and is gradually removed.

A second variety has the tubercular pustules larger, more indurated and permanent. They are numerous, conical or oblong in form; sometimes rose-colored; some suppurate at their apices; others remain hard and elevated, giving the name of "stone pock." Acne simplex is generally connected with some derangement of the general health, occurring most commonly in females, who suffer from menstrual irregularities, especially dysmenorrhœa.

ACNE ROSACEA.—*Rosy Drop, Carbuncled Face.*—Commonly begins at the end of the nose, and spreads from its sides to the cheeks, covering only a part of them. It consists of small tubercles which suppurate slowly, exhibiting a shining redness and an irregular, granulated appearance of the skin. At first it is pale in the morning, and becomes intensely red from excitement. The cuticle is gradually thickened, and its surface diversified by cutaneous veins, which become varicose and suppurate. Acne rosacea occurs later in life than the former species, and is often caused by the intemperate use of stimulating drinks. In the worst cases the nose is enormously enlarged, the tubercles suppurate and form ulcers which are cured with great difficulty.

Acne Punctata.—*Crimones.*—*Maggot Pimple.*—A number of black points, surrounded by a very slightly elevated border of cuticle. It proceeds from concreted sebaceous matter accumulated in the follicular glands, and may be squeezed out of these glands or their ducts. They sometimes inflame and form small tubercles which suppurate partially.

Acne Syphilitica.—*Venereal Acne.*—Only caused by the constitutional influence of secondary syphilis. It resembles the acne rosacea, appearing on the forehead, face, neck, and upper part of the trunk. The vari are round, conical, inflamed, with a copper-colored tubercular base and areola.

TREATMENT.—Acne in intemperate persons: *Nux-vom., Ledum, Sulphur.*

Acne Rosacea: *Causticum, Rhus, Sepia, Carb.-animalis.*

Acne Punctata: *Bell., Hepar, Natrum, Nitric-ac., Sulph., Sepia.*

Sepia operates especially on the portal system, retarding the circulation and causing an overloading of the vascular system with venous blood. A plethora venosa gives rise to most of the symptoms of *Sepia*. (*Meyer.*) It is appropriate in all cases where this pathological state causes pustular eruptions, complicated with derangements of the digestive and uterine organs.

Hydriodate of Potash.—Acne punctata in young females, pimples thickly strewn over the face, especially the vicinity of the alæ of the nose: two grain doses repeated three times a day. A well-marked case improved in ten days. Cures entirely in seven weeks. (*Banks, N. A. Jour. Homœop., 1857, Aug.*)

Mercurius-corrosivus.—This remedy, which has so long been employed in the syphilitic form of acne, as well as in obstinate cases of other skin diseases, is much more successful in homœopathic practice. In the third trituration, repeated every four or six hours for some weeks, some obstinate cases have been cured. In many others due attention to the digestive and uterine functions have been sufficient.

Belladonna.—Acne in young persons, with uterine derangements, dysmenorrhœa, and determinations to the head.

Carbo-vegetabilis—The pustules itching, suppurating, with burning pain, in lymphatic temperaments.

Hepar-Sulph., Sulphur, in psoric cases.

Rhus.-radicans.—Red-inflamed tuberculoid elevations on the skin.

PAPULAR VARIETIES.—I. LICHEN.

DIAGNOSIS.—Many kinds of this malady are described by writers, although the general character of the eruption is in all instances the same. Willan gives us seven different forms; and other authors describe even a greater number. But the propriety of these minute sub-divisions is very questionable, since some slight distinctions might be made in almost all cases which occur; and thus lead to a very extensive and inconvenient classification.

The eruption consists of numerous small papillæ upon the breast, arms, and limbs, in the first instance, which afterwards spread over the whole surface of the body, attended with a tingling, and itching, especially when exposed to heat, or when covered up warmly in bed. The eruption is generally preceded by slight febrile excitement, and symptoms of gastric or intestinal disorder. The basis of the papillæ are red, inflamed, and painful, but they do not often suppurate, or become filled with serum, but continue about eight or nine days, when they dry up, and fall off in the form of scurf.

The eruption which is so often seen in infants during the period of dentition, and known as "*the red gum*," is a form of lichen. In these cases the color of the papillæ may be red or white.

Sometimes the eruption appears in the palms of the hands, the arms and legs, when it receives the vulgar appellation of "*Salt-rheum*."

The eruption now and then comes out in a mild form upon the trunk or extremities, attended with heat, and troublesome itching on becoming heated, or from rubbing or scratching, but entirely unattended by febrile excitement. This variety is familiarly known under the designation of *prickly heat*.

CAUSES.—Irritation of the stomach and intestines from errors in diet, worms, and teething. Also protracted exposure to a hot fire; going into the cold air after long exertion while in a profuse perspiration, or sometimes from entering a hot apartment after having been exposed for a long time to intense cold.

TREATMENT.—The following medicines will suffice to cure all forms of this complaint: *Sulphur*, *Graphites*, *Calcarea-carb.*, *Sepia*, *Iodine*, *Antimonium-tart.*, *Copaiba-bals.*, *Acid-phos*, *Chamomilla*, *Dulcamara*, *Rhus-tox*, *Hepar-sulphur*.

ADMINISTRATION.—Same as for *eczema*.

2. HERPES CIRCINATUS.—RINGWORM.

A common affection of children. It consists of an eruption of small circular rings of red spots, the skin within the ring having a natural appearance at first; but, subsequently, it becomes rough, of a reddish hue, and scales off as the eruption dies away. It generally appears on the face, neck, arms and shoulders, generally disappearing of itself after two or three weeks' duration, though it often lasts much longer.

TREATMENT.—*Sepia*.—A dose or two of this remedy will generally remove the disease. When it fails, the alternate use of *Rhus-tox.* and *Sulphur*, every four or five days, will cure all common cases.

Culcarea, Causticum, and *Sulphur* may succeed in more obstinate cases.

Ring-worm of the Scalp.—This is supposed to be a contagious disease. It affects the hair, though temporally; it never produces permanent baldness. It resists ordinary remedies with great obstinacy.

DIAGNOSIS.—Characterized by patches, more or less circular, varying in size, which when first discovered are not larger than a pea, but may extend so as to reach the diameter of two or three inches, and even more; they are covered with dry mealy desquamation, with the hair broken off at irregular distances from the surface. It may last four weeks or months. It is said to be very common in England, though rare in France. It seems more common now in America than formerly.

3. PRURIGO.

DIAGNOSIS.—Prurigo is believed by some authors to be a severe form of lichen. The papillæ are, however, larger, "more isolated and distinct, and scattered over larger surfaces" than those of that affection. The eruption is sometimes of a red, or pinkish color, at other times white, like the surrounding skin, and attended with the most intense itching and stinging. The papillæ are most commonly distributed about the labia pudendi; but the disease is not unfrequently observed in other parts of the body.

The causes and treatment are the same as those described under lichen.

4. PSORIASIS.

Mackintosh regards psoriasis as an aggravated form of lepra. According to Hall, it "differs from lepra chiefly in the irregular form, in the diffusion of the scaly patches, and in the absence of its inflamed borders, depressed centres, and regular oval or circular forms. The subjacent surface is also more tender, more easily denuded, and more

prone to become affected by fissures." The disease attacks the scalp, face, the arms, the legs, the palms of the hands, the lips, the prepuce and the scrotum. Occasionally the inflammatory action runs so high that the parts become much swollen and highly painful. In these cases there is usually a considerable secretion from the eruption.

5. PORRIGO.

This is a contagious disorder, and presents itself in the form of "straw-colored pustules, sometimes circumscribed, sometimes diffused; generally, but not always confined to the head; the pustules break and give issue to a fluid which concretes into yellowish or brownish thin, or thick, crusts or scabs." (*Hall.*) It commonly makes its appearance upon the scalp and face, but may occur in any other part of the body. The disease has been subdivided into several varieties, but the divisions are of no practical utility, and tend directly to create confusion and embarrassment. We restrict the term *porrigo* to the contagious form of the disease.

Characteristics.—Scabs, peculiar in their shape and color, odor, process of formation, &c., producing permanent baldness.

Porrigo appears in two forms: 1. *Porrigo Favosa*.—Scabs or incrustations of a sulphur-yellow or bright-fawn color, when recent; scaly in their shape, hollowed out in their centre in the form of a cup; dry and almost pulverulent, firmly implanted in the epidermis, so that the depression is left when they are removed; so adherent as sometimes to remain for months and even for years; having a peculiar odor, which has been compared to the urine of a cat, or more properly to a place where mice have been. It is most often seen on children from seven to eight years of age. It is commonly on children of depressed physical and intellectual power. It never ceases spontaneously unless for want of material on which to act. It may last twenty years, resist ordinary remedies, and always producing permanent baldness of the parts affected. No tendency to periodical returns.

Causes.—Contagion; imperfect nutrition and other depressing agents. The history of porrigo involves that of other parasitic growths common on the skin, which demand consideration at some length.

Treatment.—(See *Eczema*.)

PARASITIC VEGETABLES ON THE HUMAN SKIN.

Ten varieties are enumerated as growing on the human skin.

I. *Tinea tonderes* or *Trichophyton tonsurans*.—First described by Gruby, in 1844, as accompanying the disease called rhizophyte. It exists in the hairs of herpes-tonsurans, and in plica-polonica. It con-

sists of "oval transparent spores, which give rise to articulated filaments. Its anatomical seat is in the *interior of the roots of the hairs*. The hairs and fungi simultaneously increase; the former seem larger than usual, are paler in color, lose their elasticity, soften and break off when they have risen some one or two lines above the surface of the scalp; in the short cylinder then left the fungus grows still more rapidly, so that the normal structure of the small stump of hair soon becomes indistinguishable. Sometimes the hair breaks off before emerging from the skin, the fungus, epidermis, and sebaceous matter fill the ends of the piliferous conduits, and form the little prominences which can be seen by the naked eye, and give the skin a rough, anserine appearance. The sporules and mycelium of the plants can sometimes be seen in the form of a white powder, on the roots of broken hairs; sometimes the cutis becomes congested and thickened, and then the plant is mixed up with scales of epidermis, with fatty and albuminoid granules, with pus, &c.; and crusts are formed of greater or less thickness, in which the growth of the fungus can go on. It is believed that, though this disease is communicable by contagion, and has been communicated from the horse to man, it is dependent on some constitutional cause which is essential for the growth of the plant, as it sometimes dies without having been subjected to any treatment. Its most characteristic feature consists in the baldness in circular spots, arising from the brittleness of diseased hairs.

Great Size and Rapid Growth of some Fungi.—Dr. Lowe says, an agaric, growing under a stone of more than 100 pounds weight, raises it from its bed to a height of several inches. The cells of that agaric are not widely different from those of parasitic growths. Again, Harvey says, the mycelium of the fungus, probably identical with that found in skin diseases, has been known to raise a cask of wine to the top of the cellar, the fungus feeding on the wine as it leaked from the cask. Surely the cell force which is capable of affecting such operations as this must be of some moment when exercised, although to a much less extent, and in a delicate living tissue. It must be capable of exciting inflammation and actually producing eruption, which is coeval with the development of the parasite.

The mode of spreading is annular or centrifugal in form: for, beyond the irritation produced by mere mechanical pressure, there is another source by which inflammation is engendered, viz.: the production of irritant acids and gases by the chemical action of the vegetable cell. Now a vegetable cell cannot undergo development without exciting a chemical decomposition in the pabulum on which it feeds.

The different stages in the growth of the plant give rise to alcoholic, acid, and putrefactive fermentation. Of the latter we have examples in many skin diseases, but especially in favus; the odor of which

closely resembles that of some methylamine compound. It can admit of little doubt that all these compounds are irritants.

An amount of fungus that will simply produce the death of the hairs in one person or part of the body, will, in another, produce irritation, eruption, or even violent inflammation. The causes of this difference are: 1. constitutional peculiarity; 2. peculiarity of structure, density, heat, moisture, and chemical composition of the part; 3. variation in the different amount of irritability in different parts of the body. Dr. Lowe, in 1857, Mr. Hogg, in the *Microscopical Journal*, and Mr. Robin, in his faithfully executed and beautiful work, show that these parasitic growths are all specifically identical. Mr. Hogg claims to describe accurately the fungus growths in six specific diseases: psoriasis, lepra, eczema, spilus, ichthyosis, and lichen. Of these Mr. Lowe describes lichen, and this only as a parasitic disease.

Causes of Disease by Fungi.—1. It is a general law that vegetable parasites only attack bodies in a lowered state of vitality, or commencing decomposition. 2. They cannot grow without producing decomposition, the products of which, in contact with living tissue have a tendency to excite irritation. 3. Mycelium growing amongst living structures excites inflammation. Mycelium spreads centrifugally, and the ring of the inflammation spreads to the same extent. 4. The fungi formed in all skin diseases are to be ascribed to one or two common species, the slight variation in their structure being due to the different conditions under which they grow, especially with regard to light, heat, moisture, electricity, chemical requirement, and density of structure. 5. Parasiticides are often capable of removing the disease without constitutional treatment; but this must be when the disease is purely local. The parasite has been often plainly seen by Robin and other observers. 6. When it occurs in other diseases it is merely incidental; and then it does not produce its specific action, owing to the absence of one or more of the requirements for its development. 7. There have been numerous cases of direct contagion from one subject or part to another.

In cases in which psoriasis, pityriasis, lichen, tinea, favus, and sycosis have been communicated very recently by contagion, it may be possible to cure the case by local treatment alone, as Mr. Lowe proposes, as he says he succeeded by only painting the part over with tincture of Iodine once a day, a drachm to the ounce, which he thinks the best parasiticide. But we cannot sanction his practice in any case, though even of short standing. On the conditions of health which favor the production and growth of parasites, M. Claude Bernard says: "When frogs have been kept for a long time in captivity, their health declines, and ulcerations arise around the nose and mouth. The nervous system being in this case considerably depressed, the animal is of

course found to resist much longer the action of strychnine and similar poisons, whilst parasitical affections spread with fearful rapidity. Frogs are subject to the growth of parasitical fungi, which after a certain lapse of time occasion the animal's death. Now if the healthy frog is placed in a jar containing others affected with the above-mentioned disease, the new comer sets contagion at defiance; while if another frog, affected with ulcerations in the vicinity of the natural orifices, be introduced into the jar, the parasitical vegetation covers it at once. It has been found that similar affections always have a strong tendency to arise on animals in a low state of health. The itch, a disease that frequently prevails among horses and sheep, is not often found to attack animals in good condition; and in man, the lower classes are a prey to vermin, especially in childhood and old age. While persons who live under more favorable circumstances are scarcely ever affected with this inconvenience, except towards the latter end of long-continued and painful disease. It is generally in such cases that the *morbus pedicularis* has been observed."

Dr. Wolfe says, that "baldness becomes more and more prevalent, even in young people, where the common causes, psora, syphilis and the abuse of Mercury and Iodine have had no share in its production."

TREATMENT.—Allopathic treatment has been confined to local applications by which the fungus may be destroyed. The hair (where the skin is not already bald), is removed by pincers, or by some depilatory chemical application. For this Dr. Bazin (*On the Nature and Treatment of Tinea*) recommends an unguent of "Lime and Carbonate of Soda, each one part, lard thirty parts." The Oil of Cade is said to be the best depilatory known. After the removal of the hairs, a "parasiticide" solution is applied on the skin. Bazin uses a solution of one part of Bichloride of Mercury to 250 parts of water; or an ointment of Acetate of Copper, (1 part to 500 of lard.) Others use a solution of Per-nitrate of Mercury, (1 part to 40 parts of water.) This is likely to blister the scalp and should only be used after further dilution. Another effective agent in destroying the parasites is composed of Sulphate of Copper 1 part, Alum 3 parts, and lard 30 parts. A better and safer agent is Sulphurous-acid. This must be diluted with water to the extent that no irritation of the skin will result.

The homœopathist will never rely upon local treatment of cutaneous affections even when he has seen such treatment *apparently* successful. The general *psoric*, *sycotic*, or other *dyecrasic* condition of the system in every case demands internal constitutional remedies. Under the use of *Sulphur*, 30°, or sometimes lower; *Cinnabar* 3°, or higher, continued for some weeks; *Calcarea*, sometimes alternated or followed with *Hepar*, or *Thuja*, we place the system in a condition that it ceases to furnish the proper soil for the propagation of these parasites

in which the essence of this whole group of diseases consists. We uniformly succeed in eradicating such offensive and inveterate affections by the ordinary antipsoric remedies. As we have already treated of these constitutional blood dyscrasias and of numerous remedies adapted to each of them, it is only necessary here to refer to pages 261, 264, 272, and to present the claims of a few more which we regard as especially useful. Any constitutional treatment to be effectual and permanent must be continued for a considerable time.

Tartar-emetic.—Porrigo, eczema, and herpes are quite prone to attack the penis and scrotum; the itching and burning which they occasion are almost intolerable. One of our most efficient remedies in these cases is a high dilution of Tartar-emetic. It may often be succeeded or alternated with the 12th dilution of Croton-tiglum with much advantage. Administered at the first trituration it has often cured obstinate gleets with promptness. In this form, and by being given nightly for several weeks, it has in two cases cured seminal emissions, which had occurred as often as once in twenty-four hours for many months.

In one case of obstinate porrigo, affecting both hands, and accompanied by intense burning and itching, with acrid exudation on scratching or rubbing the parts, we prescribed the Tartar-emetic ointment externally, until its characteristic eruptions should be produced. Its appearance was accompanied with much pain, although more tolerable than the porrigo irritation. In about the usual period this antimonial eruption passed off, carrying with it all symptoms of porrigo, and leaving the hands cured.

Internally, it is appropriate for itching pustular eruptions upon the arms and hands. In such cases it sometimes proves promptly curative, after Sulphur, Hepar, &c., have failed. We employ it from the 6th to the 12th attenuation.

GENERAL SYMPTOMS.—Spasmodic movements and twitchings of the arms and hands; violent clonic spasms with loss of consciousness; lock-jaw; paralysis; relaxation of the muscles and great prostration; languor; exhaustion; collapse; loss of speech and coldness of the body. Cholera-morbus; contraction of the pupils. Strong, violent convulsions and spasms; tetanus; extreme restlessness and anxiety. Cold; pulseless; speechless. Thirst and burning sensation through the prima via. Prostration of strength; insensibility; faintness; prolonged trembling of the head and hands, at every movement, like paralytic trembling. Symptoms worse on being seated, or manifesting themselves in that position. Watery diarrhoea, with extremities cold, powerless, with cramps in the calves of the legs.

Porrigo Decalvans.—Dr. Carter, an army surgeon, says he has often succeeded in restoring the hair which had fallen out from the

abuse of Mercury, or from acute disease. He used five grains of Tartar-emetic to the ounce of distilled water.

Two cases of partial baldness were cured by Beauchamp. In one case the solution was too strong and brought out a crop of pustules on the head and the whole body, attended with fever. The fever soon subsided and the pustules disappeared, except on the head, where they coalesced and formed an immense scab, resembling *tinea capitis*.

Hahnemann mentions a variolous eruption on the chin, attended by itching, as a symptom of Tartar-emetic. Porrigo, eczema, and hepatic eruptions on the face are often relieved by the 6th dilution of Tartar-emetic. It is sometimes successful in old hepatic eruptions of the face when employed in the form of a mild unguent.

Arsenicum.—Dr. Banks, of New-York, gives a case. A young man of high life in New-York had a horrible itching surrounding the anus, perineum, &c. Some parts dotted with papules entirely denuded with hair, and of a coppery color, resembling secondary syphilis. Arsenious-acid, one twentieth of a grain, three times a day internally; and unguent of Iodide, of Arsenic, tepid baths externally, moderate diet, exercise. In three weeks every trace of the disease was effaced.

2. *Mycosporon circumscripta*.—This parasite differs from the preceding by "its numerous waved filaments and by the extremely small size of its sporules. It is not found in the interior of the root of the hair, but forms round each hair a small tube; the hair then becomes opaque, softens and breaks off. The hair rapidly falls off; the dermis is not congested, and the epidermis is thin and smooth.

3. *Microsporon mentagrophyta*.—Differs from the last by possessing larger spores and filaments. Its seat is between the bulb of the hair and the follicle in which the bulb is seated, and never extends beyond the surface of the skin. Treatment the same as already given.

4. *Microsporon furfur*.—Discovered by Eichstedt in 1846. It is the cryptogamic plant which forms with the epidermic scales, the yellowish brown scurf seen in pityriasis.

5. *Achorion Schæleinii*.—This is the mycdermatous fungus which constitutes the characteristic of *TINEA FAVOSA*, (*porrigo favosa*). This is an affection of the skin usually confined to the scalp, but occasionally found on the trunk, limbs, or face; almost invariably occurring before the seventeenth year, and peculiar in old countries and cities to the poorer classes.

Symptoms.—“Favus is an affection characterized by the presence of more or fewer crusts, which at first, are of a uniform sulphur-yellow color, having their superior surfaces slightly concave and pierced in the centre by a hair, and their edges slightly depressed beneath the level of the cuticle; they are surrounded by skin which, for some time previous to their appearing, presents a glazed red, and vascular look,

and is more or less covered with desquamated epidermic scales. The crusts, when isolated, have a more or less distinctly round or oval figure, and have in their upper surfaces a depression in form like that of a lupus seed (*porrigo lupinosa*) ; but where numerous and confluent, they acquire, from contact with one another a hexagonal or honey-comb appearance, and hence the term *porrigo favosa*. In the progress of development, the edges of the crusts become prominent, and marked by several concentric rings, whilst their upper surfaces gradually lose the concave and assume the convex form. In course of time, there is observed in the centre of each capsule a whitish spot, which slowly extends into the surrounding deeper yellow portion, and ultimately reaches the edges of the crusts, which gradually sink to the level of the skin, and frequently present numerous cracks or splits. There speedily commences in this central white portion a loss of coherency, or a process of crumbling down into a coarse gritty powder ; and when this, in the progress of the disease, has extended to the edges, the capsules lose all definite form, and become broken or split up into numerous pieces presenting the appearance of one continuous crust, irregularly fissured on the surface. The diseased mass crumbles down, and communicates to the fingers, on trituration, a feeling, compared by some to that caused by the crushing of dried putty ; becomes a favorite site for vermin and their eggs, and exhales a peculiar odor which has been likened to that of mice. For some time the disease occasions little uneasiness ; but ere long the part affected becomes the seat of a disagreeable itching, which gradually increasing, at length becomes so intolerable that the patient cannot resist incessantly scratching and tearing at the diseased mass, the consequence of all which is, that in cases of some standing, we usually meet with more or less sanguineous or serous effusion, with secondary pustular eruptions, and at times with violent inflammation, which in a few cases terminates in suppuration, and in other instances in unhealthy ulceration."

Pathology.—When a recently-formed favus crust is carefully examined, it is found to consist of a capsule of epidermic scales, coated in the interior with a granular matter, constituting a soil on which arise multitudes of a peculiar fungus, named by Gruby in 1841, *achorion Schanleinii*, in honor of Schoenlein, of Berlin, its discoverer. From the granular mass sprout numerous cylindrical tubes (thalli), which extend themselves towards the centre of the crust, and, branching dichotomously, contain at their extremities (mycelia) numerous spherical or oval bodies termed sporidia. The thalli frequently contain numerous molecules or granules, and are most numerous near the exterior of the crust ; whilst the mycelia and sporules, mingled with more or less granular matter, abound at the centre, the whitish color of which has been ascribed to the aggregation of the sporules. In course of time

the thalli and sporules enter the hair-follicles, cause atrophy of the hair-bulbs, and consequently the baldness observed in the subjects of favus, and, as may be witnessed under the microscope, at times extend into the body of the hair. "The sporules are the bodies from which the plant is developed; and from the observations of Remak and others, it appears that, in the process of elimination, their investing membrane gives off shoots or prolongations which ultimately become tubes, enclosing at their extremities sporules, which in time are pressed out and become free."

Dr. Pirrie says, that from the observations he has made on this disease he has reached the conclusion, "that the peculiar matter of favus is an exudation on the surface of the derma; that this exudation becomes the seat of peculiar phytaceous growths, which in the progress of development, penetrate the epidermis and become encysted by its scales; and the hair-follicles are not the seat of the disease, but only become secondarily affected."

Chemical Composition.—In analyzing the matter of favus, Thenard found in 100 parts—albumen, 70; gelatine, 17; phosphate of lime, 5; water, 3; and loss, 5 parts.

Cause.—Extensive examinations of the works of authors who have written on this disease reveal only the extent of the discrepancies of opinion that exist among medical men on its nature and origin. While it is shown to be contagious in many cases it does not appear to be always so. The opinion given by Dr. Pirrie is most nearly in accordance with the philosophy of our school, and is thus given: "The impression produced in my mind by the histories and symptoms of the cases that have come under my notice is, that the *fungus*, although it occasions a certain amount of irritation, is not the sole or the original cause of the eruption, but a mere accidental growth upon a congenial soil formed of an exudation, which is itself a mere local manifestation of a *peculiar constitutional state*; in short, that the disease is owing to a *blood dyscrasia*; that from the blood is formed an exudation which is essential to the existence of the fungus; and that, until this peculiar matter be exuded, sporules of the plant applied to the integument must remain inert and undeveloped." Among all the experiments to produce the disease by inoculation, in no instance yet reported was the attempt successful, till, from irritation caused by prolonged close application of the favus matter, either redness, pain, suppuration, or some other sign of the inflammatory process, had manifested itself. Erichsen says the essential nature of the disease consists in the deposition of the matter of tubercle. Erasmus Wilson thinks that "defective nutrition is the real cause of the disease. Bennett considers favus to be "essentially a form of abnormal nutrition with exudation of a matter analogous to, if not identical with that of tubercle, whic

constitutes a soil for the germination of cryptogamous plants, the presence of which is pathognomonic of the disease. Hence is explained the frequency of its occurrence in scrofulous persons, and amongst cachectic and ill-fed children."

Dr. Pirrie gives the following summary of his views of favus:

1. That it is essentially characterized by the presence of fungus which is easily discovered by the microscope.
2. That it is peculiar to the young, and confined chiefly to the poor.
3. That it is most commonly met with in the scalp, but occasionally on other parts of the body.
4. That the hair follicles are only secondarily affected.
5. That it is by no means a rare disease in Scotland, being exceedingly common in Edinburgh, and having been more so for several years past in Aberdeen than in Glasgow.
6. That it is considered more common in Ireland than in England.
7. That it is a blood disorder, and that the fungus is not the sole nor the original cause of the eruption.
8. That many are insusceptible to it; and that it is feebly contagious, and very often arises independent of contagion.
9. That the previous state of health has an important bearing on its outbreak.
10. That it is intimately connected with the strumous diathesis.
11. That want of cleanliness strongly predisposes to it.
12. That for its removal, general as well as local treatment is necessary."

TREATMENT OF PORRIGO AND ECZEMA.—*Rhus-tox.*, *Arsenicum*, *Croton-tig.*, *Sepia*, *Stibium*, *Sulphur*, *Hepar-sulph.*, *Petroleum*, *Mezereum*, *Apis-mel.*, *Kali-hyd.*, *Calcarea-carb.*, *Mercurius-hyd.* Occurring in gouty or rheumatic subjects, *Rhus* and *Kali*, in the higher attenuations, are especially indicated.

When a psoric taint is suspected, *Sulphur*, *Calcarea*, and *Hepar*, in the higher dilutions, will be required.

Cases connected with secondary syphilis, will demand *Mercurius-hyd.*, *Mezereum*, and *Kali-hyd.* in the lower potencies.

The local treatment recommended by Robin, Bazin, &c., as given above, might be to some extent useful if our common treatment after a reasonable trial shall be found to need auxiliaries, which they will perhaps never do when they are intelligently used.

VESICULAR VARIETIES.—I. HERPES.—TETTER.

DIAGNOSIS.—The eruption consists of groups of small vesicles, situated upon red and inflamed bases, and separated from each other by sound portions of skin. As the vesicles increase in size, the color-

less fluid which they contained in the first instance, becomes gradually opaque, and in two or three weeks dries up into thin crusts, which scale off. When the eruption makes its appearance, there is an unpleasant burning and crawling sensation, which soon settles into a deep-seated, and in some cases, severe pain. It may be confined to a single point, or extend in clusters of different sizes, over a large surface.

Another variety of tetter, is often observed to commence in the form of broad and irregular clusters of small vesicles, sometimes seated on swollen and inflamed bases, and shortly becoming confluent; or the eruption may appear in distinct groups and unattended with any inflammation or swelling of the surrounding skin. In the first form, when the inflammation is somewhat active, the vesicles often burst and discharge their contents, leaving troublesome ulcers at their base. This variety is sometimes described under the term *eczema*, or *humid tetter*.

According to Bateman, most kinds of herpes pass through a "regular course of increase, maturation, and decline, and terminate in about ten, twelve, or fourteen days. The eruption is preceded, when it is extensive, by considerable constitutional disorder, and is accompanied by a sensation of heat and tingling, and sometimes by severe pains in the parts affected."

Herpes has been divided into many different species, on account of presenting some points of distinction when attacking different parts of the body. Thus when vesicles appear upon the lips during colds, fevers, and inflammations of the mucous membranes of the pulmonary or digestive apparatus, the disease is called *herpes labialis*. The eruption, in this instance, is usually of a more inactive and unhealthy character, than when it appears in other parts of the body. The matter which escapes from the vesicles is purulent or sanguous, and concretes into black crusts.

When the eruption consists of a narrow belt of vesicles, extending partly around the body, or over the shoulder, it receives the appellation of *herpes-zoster*, or shingles.

Another, and very common form, is thus described by Schroen: "An inflamed red ring, commonly perfectly circular, and upon which numerous small globular vesicles appear, which, though at first perfectly transparent, soon become turbid; these burst, and discharge a thin fluid, which forms a slight lamellated crust that soon becomes detached, leaving a bright red mark. Sometimes the fluid is absorbed, and the vesicles fade and fall off in thin, scurfy, exfoliations. The duration of the disease is about seven or eight days for each ring; but as successive rings appear and go through a similar course, it may last between two or three weeks." Schœnlein supposes that a repulsion of this eruption predisposes the patient to *fungus hæmatodes*. This variety is called *herpes circinatus* or *ring-worm*.

Other subdivisions have been made into *herpes proptialis*, *herpes iria*, *herpes phlyctenodes*, &c., but since the nature of the malady is the same in all these varieties, and as the modifications which occur are dependent in a great measure upon the peculiar structure of the affected parts, we do not deem it necessary to enter into a more minute explanation of the details pertaining to each species.

CASES.—Errors in diet; immoderate use of fat, rich, and indigestible food; a morbid condition of the cutaneous excretion; local irritations from external injuries, and the application of acrid substances. It has been observed that those who have suffered from attacks of syphilis, scrofula, scurvy, or who have taken much mercury, are most prone to the disease. In these cases, a predisposition is established in the skin, so that from slight causes herpetic eruptions are excited. See Vol. I. p. 285.

TREATMENT.—When the eruption attacks the face, head, body, or extremities, our best remedies are, *Sulphur*, *Calcarea-carb.*, *Silica*, *Carbo-veg.*, *Sepia*, *Rhus-tox.*, *Belladonna*, *Lycopodium*, *Iodine*, *Graphites*, *Aurum-mur.*

Herpes of the lips should be treated with *Arsenicum*, *Acid.-phot.*, *Graphites*, *Phosphor*, *Hepar-sulph.*

If the eruption appears upon the scrotum or prepuce, the appropriate remedies are, *Mercurius*, *Arsenicum*, *Sulphur*, *Calcarea-carb.*, *Conium*, *Rhus-tox.*

Nearly all cases which occur may be cured by *Sulphur*, *Calcarea-carb.*, *Sepia*, and *Mercurius*; but should these remedies disappoint us, there will be no difficulty in making an appropriate selection from the medicines first enumerated.

ADMINISTRATION.—For the most part, we rely upon the first, second and third attenuations; and prescribe drop-doses of the dilutions, or grain-doses of the triturations, twice daily, until a satisfactory amendment is evident.

Dr. Wolf says, the sycotic tetterers have the greatest resemblance to the bark of a tree. The crusts have a dingy color, or they have a more marked white appearance, like the bark of young birch trees, with continual itching and peeling off, with the odor of blennorrhœic secretion, &c. This is only cured by *Thuja*.

Staphysagria.—Dr. Roth. Eruption, covering part of the thigh of a child, aged ten years; it appears in summer only; enlarged afterwards, covering the upper part of the thigh with a scaly crust, accompanied with heat; a corrosive pus exudes from the interstices; scales fall off from time to time, leaving a moist surface covered with vesicles, increasing and secreting, as before; the pus forming new vesicles wherever it touches; eruption then reached the breast, arms, and back; momentary relief from scratching only; glands of groin and

axillæ swollen and hard; body emaciated; muscles soft and relaxed; face anxious and full. *Staphysagria*, 30, produced aggravation of the itching for two days; it then diminished, vesicles dried up; bluish, tense, rough skin was formed. After seven weeks *Clematis*, one drop of the 6th dilution; the thighs and body covered; the scaly crusts fell, a few vesicles remained, but caused no irritation. After two weeks there was still roughness of the skin, new vesicles appearing, with itching and burning. *Rhus.*, 9°. This dried up the vesicles, leaving the skin first dry and red, but it afterwards became soft and white; an occasional dose completed the cure.

Calcarea.—*Croserio* says: *Calcarea* is generally suitable in dry skin diseases, accompanied with itching. In one case, "there was dry ring-worm, with swelling of the cervical glands, and mesenteric disease. The patient was cured in four months with *Galcarea*, a dose every morning.

Cuprum.—This remedy is a specific for herpes, but only in those cases in which the eruption is the external manifestation of the blood disease, for which *Cuprum* is the specific; other forms of it depend on idiopathic disease of the skin or kidneys. *Rademacher* cured with it some cases of chronic, moist herpetic eruptions which spread over a great part of the body.

A Case.—A young man had for more than a year a moist herpetic eruption, which had resisted several internal and external remedies. The extent was so great that the extremities could not be moved. He was growing thin and weak; sleep bad; he had much pain in the limbs and in the broken out parts, so that he was unfit for work. He took Acetate of Copper, several drops six times a day. After three days of this treatment the patient felt less prostration of strength; and continued to daily improve in health and strength. At first there was no improvement in the eruption; but the itching gradually became less troublesome, and it at length ceased entirely." The eruption then began to change in appearance; the redness grew paler, the oozing gradually dried up, while the cuticle scaled off, and was replaced by new and healthy skin. In three weeks the cure was complete.

Herpes Scrotalis, and Preputialis, Swollen Glands and Hyperæmia of the Liver.—Dr. *Kissel* says, a man, aged thirty, of weak constitution, had been ill twelve months. First he had jaundice, then swelling of the lymphatic glands of the neck and axillæ, followed by herpes on the scrotum and prepuce; and afterwards herpetic vesicles on the lips; he had pressure on the præcordium, eructation, pains in the loins. Tongue clean; appetite good; stool bright yellow; urine deep yellow, clear, very acid, with red amorphous sediment of uric-acid. After trying *Chelidonium* for eight days, with no improvement but in the diminution of the pressure on the præcordium, *Cuprum* v

given also. At the end of eighteen days the herpes was everywhere cured, and the glands were becoming smaller. The stool was now consistent and brown, the urine bright yellow, clear, and normally acid; in twelve days more all the morbid symptoms had disappeared.

Skin Affections caused by Compression of the Nerves.—M. Brois Sequard says: Science abounds in facts showing that the *complete section* of a nerve is followed by no other alterations in nutrition than an atrophy slowly produced in all the paralyzed parts. Experiments on animals show also the same absence of alteration of nutrition after the section of the nerves of the limbs. The effects of the *compression* of nerves is quite different. A man had fracture of the lower extremity of the radius, after this was cured, the median nerve was compressed. The thumb, index, and medium fingers ulcerated, resisting all treatment, and were only cured by relaxing the parts by which the pressure was taken from the nerve. When the pressure was renewed the ulceration commenced anew. A man who had been shot in the forearm, by which certain nerves were injured on the internal part of the fore-arm in parts supplied by these nerves, an eruption resembling zona appeared on the same parts deprived by sensibility.*

2. LEPRA.—LEPROSY.

The increase of some forms of this disease in some parts of the Western hemisphere has led to renewed investigations concerning its nature and history. It was once universally known and dreaded; from the sixth to the fifteenth century it attracted a large share of the attention of law-givers and philanthropists. Many ordinances were passed for the regulation of their civil rights; and lazarus-houses were erected in all the countries of Europe. The lepers were regarded in law as civilly dead; their funeral obsequies were performed, and masses said for the benefit of their souls. The marriages of lepers were void in law, though they were allowed to marry other persons affected with the same disease.

In the fifteenth century, leprosy prevailed over all Europe; but from that period it gradually declined before the advance of civilization and the improvement in the condition of the poor. In England it has probably been unknown for between two and three hundred years; in Scotland it lingered to within the memory of persons yet living. In Shetland it was not extinct at the close of the last century. In 1748 a case from Shetland was in the Edinburgh Infirmary. In the middle of the sixteenth century the governments of Germany, France, and Italy suspended the leper houses. A few cases are yet reported in the south of France, in Catalonia; in Sardinia about sixty cases re-

* "Des Lois de l'Endemicité."

main. The disease still exists in Asia Minor, Arabia, the East, and at the Cape of Good Hope. In Surinam and Demerara it has been domesticated through the importation of slaves from Africa; in the British West India Islands it is continually introduced by the Chinese Coolies; in the Faroe Isles it has gradually declined since the sixteenth century and is now extinct; in Iceland it lingers in a few spots on the coast where the inhabitants live only by fishing. The lepers were very numerous before 1707, when the great small-pox epidemic swept off most of the leprous families. In 1768, 280 lepers were still in the Island, and there was a law which still exists, prohibiting the marriage of lepers. In 1846, they were reduced to 66. In Sweden, leprosy is nearly extinct; in Norway it still prevails. It is most common in the vicinity of Bergen, where there has been a hospital for lepers since the year 1277. The Hospital St. George (the building) is 160 years old, and its entire arrangements have continued unchanged for three centuries. There is a true "leper house" and the true leprosy of the middle ages.

In Norway, leprosy has been on the increase for at least more than thirty years. In 1836 there were but 659 cases; in 1845 the number was 1122; in 1853 the number was 1782. They are found along the whole coast from Stavanger to Hammerfest, a distance of 800 miles. The number in 1856 was 2000. The subject of prohibiting the marriage of lepers has been since debated for four months at a time; and the decision has been that the subject is not well enough understood to justify any legislation on the subject.*

"By the laws which have existed from the times of Moses, the inhabitants of Palestine affected with leprosy are isolated from all actual contact with their fellow-men. The quarters of the lepers is a melancholy place. A traveller says: "Near the gate of Zion, on the way to Bethlehem, I saw many of them sitting on the rock, their hideous faces uncovered, thrusting forth their scaly hands for alms. Their huts are rudely constructed of earth and stones, seldom more than one apartment, and this so filthy and loathsome that it seemed unfit to be occupied by swine. There they live from generation to generation." "I passed when the rays of the sun were cold and the light was dim; and there came out from the reeking hovels, leprous men, gaunt with famine, and they bared their hideous bodies and howled like beasts; and women held out their loathsome and accursed babes, and tore away the rags that covered them, and pointing to the shapeless mass shrieked for alms. All was disease and sin, and sorrow wherever I went." Such is the leper: "death gnaws at his vitals, and unceasing

* See "The Spedalsk Disease: its Causes, Cure, and Prevention." By D. C Danielssen. 1854. *Norsk Magazin*, parts IX. and X. 1856.

tortures are in his blood; he is cast out from the society of his fellow-men, and forbidden to touch, in friendship or affection, the hand of the untainted." And yet, life such as that, he thinks worth having, and struggles to perpetuate it.

Geo. K. Kendall, in his narrative of the Texan Santa Fe Expedition (Vol. II., p. 220), describes the *lazarinos* or lepers of the Hospital San Lazaro. He says it appears in many different aspects.

In 1844, the existence of leprosy in New-Brunswick attracted the attention of the provincial government, and a medical commission was appointed to investigate it. The report of the Committee clearly shows that the disease was the *Greek leprosy*, having no affinity with elephantiasis.

Causes.—Drs. Boeck and Danielssen have maintained that leprosy is a thoroughly hereditary disease,—that it descends from generation to generation; they think it descends more by the collateral branches than by immediate succession; and that it frequently skips over one, two, or three generations, to reappear with fearful severity in the fourth.

The belief in hereditary transmission was so general in Norway, that a proposition was laid before the Storthing, in 1754, to prohibit the marriage of all lepers, and of their immediate descendants; the bill was debated but was rejected. Dr. Hjort thinks the disease not entirely propagated by contagion.

Contagion.—Denied by Hjort, Danielssen, and Boeck; but Hoegh, in his report, 1855, is inclined to admit a secondary infection through the acarus *seabiei*, so frequent on the skins of lepers. He says the crusts and horn-like elevations that, in many cases of *spedalsked*, cover the arms and face, are now found to be composed entirely of the remains of *acari* closely agglutinated together; and, on removing forcibly these crusts, living *acari* are to be found on the ulcerated surfaces beneath. In one family, residing at a height of 2,000 feet above the sea-level, a female, aged twenty-five, of a family not related on either side to any leprous subject, by associating with a leprous girl, became a year after affected with leprosy; she then communicated it to her sister, her brother; then her mother.

Other External Influences.—Dr. Hjort attributes the increase of leprosy in Norway to extension "of the great sea fisheries" on the coast of Norway, "exactly in those parts of the coast where the *spedalsked* is most prevalent." In the last century there existed large fisheries on the coast of Sweden, and leprosy was very common there. In 1807, the herring shoals left the coast, and immediately showed themselves on the coast of Bergen; leprosy declined on the Swedish coast, and in 1837, the hospital of Uddevalla had hardly a single leper, but since the transfer of herring fisheries to the coast of Norway, leprosy has gradually extended.

It is a disease of the sea-coast, but extending up along the fiords or inlets which descend towards the sea, and along which the fishermen are congregated. There the air is damp, loaded with sea-fog, though the winter cold is intense; swampy land, stagnant waters, the water intolerable. The houses are small, with small windows, little light; windows always nailed down, never opened, or the house aired or swept once a year. The dog and pig live in the hut with the family, who eat, cook and sleep in the same room. The children go without shoes to herd the cattle on the hills from which the snow is melting; they endure the storms of spring, the rains of summer, and the heavy mists of autumn; they sleep in their unchanged clothes, which are rarely if ever washed; face and hands may be washed twice a week, the feet once a year; the rest of the body, *never*.

From the first of January to the end of March, the hardest period of the northern winter, the men are engaged in the herring-fishery. They spend the night on the bare ground under an upturned boat or a sail spread as a tent. The men are packed together, lying side by side upon the floor in their wet clothes. The condensed vapor from the breath and that from the wet clothes drips upon them from above; and the air, filled with offensive exudations, is unfit for respiration; cleanliness is totally neglected. The greater part of the day is passed at sea, half frozen in an open boat.

From the first of February to the middle of April, the Norwegian peasants

“Throng the shores where dread Loffoden
Whirls to death the roaring whale : ”

Not less than 3,500 boats, each manned with six men, assemble at these fishing stations

“Around the shores where runic Odin
Sings his death-song to the gale.”

To these dreary isles, beyond the Arctic Circle, they make their voyages and return in the course of two weeks, having neither changed nor dried their clothes in the time, having slept on “the soft side of boards” for beds, twenty men in a lodge that had no chimney to favor the escape of smoke; the floor is never swept, and the accumulating filth is never removed.

The food of these people, among whom leprosy is increasing in the midst of the advancing light of the nineteenth century, consists chiefly of fish.—Salt fish, imperfectly preserved, having lain too long on the shore waiting for a purchaser. When no purchaser comes, the half-putrid fish are partially salted, and after a lapse of some weeks they are “pickled,” that is, *soured* by becoming half-rotten. A vitiated taste acquired by long use, leads the peasant to prefer the tainted fish to

those fresh from the sea; and they seldom eat any until the process of decay is far advanced. Other meats, if used in Norway, are hung up in a salted state for years.

LEPRA GRÆCORUM. (ELEPHANTIASIS OF THE GREEKS.)

DEFINITION.—Dusky-red or livid tubercles of various sizes on the face, ears, and extremities; thickened or rugous state of the skin; diminution of its sensibility, and falling off of the hair, excepting that of the scalp; hoarse nasal or lost voice; ozoena,—ulcers of the surface, and extreme foetor.

Tubercular Lepra of the Middle Ages.—This is the true *lepra anaesthetica*; *lepra tuberculeuse* of the French; *lepra græcorum* of the middle ages. Dr. Valentine Mott says he examined this disease at Athens, in 1842, and found it to resemble syphilis, though it is a "more formidable and apparently more chronic affection than syphilis." He thinks the ancient leprosy of the Jews, "the progenitor of them all," and that on more thorough investigation, the ancient leprosy and the modern syphilis will be found to be more nearly related than has yet been supposed. Mercury and Arsenic were found the best remedies for both.—(*Travels in the East*, 1842.)

The Greek leprosy is a hereditary and contagious disease.* It was introduced into Western Europe at the time of the crusades. It has gradually disappeared in the lapse of centuries, though it is still endemic in Egypt, Java, some parts of Norway, and Sweden. It is characterized by, "hard, insensible tubercles, which appear upon the skin, and are accompanied by a progressive insensibility, and the loss of the voice. The tubercles appear on different parts of the skin; they are hard, rough, and numerous, and cause the loss of the hair at the places where they appear. They finally terminate in ulcers, which penetrate even to the bone, producing a caries. They also cause the separation of parts of the body,—the toes and fingers, for example, dropping off. There is also languor in the motions, a dullness in the senses, a change in the voice, offensive breath, and lethargy. It appears in three forms: 1. The squamous or scaly. 2. The crustaceous, in which the skin is covered with crusts. 3. The tuberculous.

LEPRA ANÆSTHETICA.

It commences in spots or patches, which are of a somewhat lighter shade or color than that of the adjoining surface in blacks, and a tawny color in whites. These patches appear first in the feet, hands, legs, and arms, and seldom on the face and trunk, till a more advanced period. They sometimes seem slightly prominent, from the thickening

* See "Good's Study of Medicine." Doane's Edition, 1840.

of the several tissues of the skin; and they are rough, and apparently wrinkled, from minute indented lines; but the wrinkles do not run into the surrounding skin. The hairs, if any have previously existed in the seats of these patches, fall out or cease to grow in them. The patches are insensible, and extend slowly over the legs and arms to the trunk, until the extremities, and sometimes also the greater part of the surface of the body, are more or less affected and deprived of feeling. The affected surface is unpermeable, and neither itchy nor painful, nor swollen. As the disease advances, the pulse becomes slow and soft, and the bowels constipated; the toes and fingers are benumbed, as if with cold,—shining, slightly swollen, and stiff.

Dr. Danielssen (*Norse Magazin*, Christiana, 1852) reports seventy cases of "spedalsked," or lepra græcorum, of whom eleven had it in the anaesthetic form. Of the anaesthesia of the extremities, he says: "It is the result of inflammation of the sheaths of the nerves, indicated by excessive sensibility of the skin; and this is followed by the deposit of the whitish-yellow albuminous matter between the fibrils of the nerves, compressing them, and at length producing total loss of feeling in the parts to which the nerves are distributed." When the cutaneous nerves are inflamed in this manner, "they can be felt as hardened cords beneath the skin; and where there is hyperæsthesia of the hands, the ulnar nerve at the elbow is so extremely sensible that the patient almost faints with pain if it is slightly compressed." These symptoms show that the disease is an inflammatory affection; but it is a dyscrasie inflammation, having a constitutional cause, over which antiphlogistic measures and local treatment have no control. Dr. Danielssen says, there is an excess of albumen and fibrin in the blood, and to this point his treatment is chiefly directed. He restricts the patient to a vegetable diet and steam baths. Other measures have been tried with little result, as it seems that out of seventy cases hardly one was cured. Iodide of Iron was his principal dependence in the anaesthetic form of the disease.

Oxalic-acid has been extensively tried since 1851, but it had no perceptible effect, though continued for many months. One girl, aged fifteen, took 2 to 2½ drachms daily of the pure acid with perceptible effects. When seven or eight grains were given every two hours, the pulse in some cases suddenly dropped to seventy beats per minute. Leprosy, says Dr. Danielssen, "is a disease which, left to itself, never dies out; it follows its prey through successive generations, even to the last scion of the race."

Some cases of this disease, generally from the tropical parts of America, have been treated by physicians of New-York. One of these is described by Dr. H. M. Smith, in the *American Homœopathic Review*, Nov., 1862:

W. T. aged twenty-four, born in Demarara, of English parents, was one of twenty children. Was vaccinated when a few months old; instead of the true vaccine pustule, small black sores appeared, which discharged thick black pus. From this beginning the leprous affection extended throughout the system; resisted all treatment—at home, in Barbadoes, and England. He now presents the following appearance: "Thumb and fingers of the right hand are gone from the metacarpophalangeal articulation, and all the phalanges of the fifth finger are gone. All that remains is about half of the first phalanx of the index finger, one-third of the first phalanx of the fourth finger, and the first phalanx of the third finger. He has lost the toes of both feet, from the metatarsal phalangeal articulation, with the exception of the first phalanx of the left fifth toe, which was then denuded and coming off. On the hands are a number of hard red pustules, from one-eighth to three-eighths of an inch in diameter. With this exception the skin appears smooth and dry, and over the three remaining joints of the left hand are deep fissures; where the fingers have been the skin has healed, as over a stump after amputation. There is no sensibility of the arms below the elbow, nor has there been for years; the legs are likewise insensible from the knees down. The feet differ in appearance from the hands: instead of the skin being dry and cracked, it is soft and moist, and has disappeared on the soles—leaving ulcers on each foot its entire breadth. Otherwise than this disease of the hands and feet, he says his health is good. In cold damp weather he is troubled with a cough, but this is always relieved by homœopathic medicine. The patient is intelligent, and has received a common education."

The concentration of the constitutional affection upon the extremities seemed to be effected by a bruise in the palm of the right hand; a swelling was observed the next morning, which was lanced, and discharged freely. From this time he had no use of his hand; the fingers became flexed, and he was unable to open them except by taking the fingers of the other hand. After coming to this country, "a fissure in the skin was observed on the distal end of the index finger of the right hand; the nail came out, and the fissure spread, making 'soar slits,' as far as the last joint. The phalanx became circumscribed with dry skin, which was poulticed with bread and water, and peeled off until the bone was denuded, and was knocked or fell off. In this way the third phalanges of all the fingers of the right hand were lost. The fifth finger of the left hand was not affected, the disease extending no further than the second joint. The disease then returned to the right hand, this time extending only half the length of the second phalanges;—next the thumb of the left hand became affected, and healed. The right foot was attacked next; what was supposed to be a corn

appeared on the sole of the foot, between the first and second toe,—a piece of bone came out and the foot healed."

After further operations on the fingers of both hands, the disease returned to the foot previously diseased; commencing in the joints of the toes, which "sloughed away, leaving the ends hanging. The vessels were seen 'like strings,' which soon disappeared, when the hanging portions fell off. All sensation left the foot soon after the sore disappeared."

Dr. J. R. Andrews, of New-Jersey, who treated this case for some time, says of him, that "under the use of *Arsenic*, *Hepar*, *Conium*, *Silicea*, *Merc.-iod.*, *Rhus*, *Lachesis*, *Nitric-acid*, *Sulphur*, *Kali*, &c., the parts assumed a more healthy appearance; they gradually improved, and entirely healed."

It is said, that this disease is common in Demerara, but confined to the black population. In Africa it is well known and regarded as contagious. A missionary, who visited an island to which the lepers are banished, describes their efforts to support themselves by laboring with their mutilated hands. One man, who had hands, but had lost his feet, was sowing barley on the field, being borne on the shoulders of a comrade who was so fortunate as to retain his feet, though his hands had both fallen off; between them the work was performed.

TREATMENT.—There is a tradition, according to Pliny, of the ancient Egyptian kings bathing in human blood to cure leprosy. There is also a similar story of the Emperor Constantine; but it seems he was restrained from the experiment by a vision, and was afterwards otherwise miraculously cured. It is at least certain, that in ancient times great virtues were attributed to the blood of children and innocent persons in the cure of leprosy. The remoter traces of the belief in the expiatory or healing properties of pure blood ramify into the most ancient periods reached by tradition or history. The cure of this particular disease by the blood of animals in association with certain symbolical ceremonies is mentioned by Moses.

During the middle ages the belief of the curative powers of the blood baths was universal, though the cures were remarkably rare—a fact which is thus accounted for by the historians: It was in some way ascertained, that no blood would prove efficacious but that of children and pure virgins, who freely and voluntarily offered themselves for the purpose of saving the life of a beloved sufferer. Such a case is recorded in the poetical history of the Suabian Knight, "Poor Henry," which is said to be one of the finest poems of the thirteenth century. The history of Amicus and Amelius is another, based upon the general belief of the same superstition in those times. Louis XI., of France, after a life of cruelty and crime, endeavored to avert his approaching death by the use of the blood of children. The incident was employed

by a poet to exalt the horrors of his tremendous version of the tradition of Faust. Sprengel says, the story is true, and he also describes the blood baths as actually employed; though the fact was never settled on unquestionable authority.

TREATMENT.—The most important remedies in this malady are, Sulphur, Arsenicum-iod., Arsenicum-alb., Thuja, Carbo-animalis, Kali-hyd., Rhus-tox., Podophyline, Sepia, Graphite, Silica, &c. bism., Calcarea-carb., Cicuta.

The best effects will be derived from the highest attenuation of these drugs.

Vapor baths and fumigations of Iodine and Sulphur are excellent auxiliaries in the treatment. These means should precede the use of the internal medicines.

Arsenic.—Dr. Hunt, of Margate (England), says he has employed it for thirty years in lepra, eczema, psoriasis, acne punctata, and impetigo, and has never failed in any one of these diseases where the remedy was fairly tried. His rules for using it are: 1. Begin the use of the Arsenic after the active cutaneous inflammation has subsided. 2. Dilute it with the food and drink; give it when the stomach is full—not empty. 3. Give three or four doses daily with the greatest regularity,—four or five drops to begin with, equal to fifteen drops per day. Still this dose is liable to produce medicinal aggravation: conjunctivitis commencing, warns to stop. But when the minimum dose is discovered, persevere with this for many months, in cases that have lasted for years. The advance of the disease, when the remedy is intermittent, shows the power of the remedy over it. Abstain from all external applications. All the advantage of this course is more completely gained by giving the attenuated preparations of Arsenic. The third trituration may be long continued if given in a large quantity of water.

In lepra anaesthetica, or elephantiasis Graecorum, Arsenic has been used for centuries in India. The celebrated "Tanjore pill," which is considered by the natives of India as a specific for this form of lepra, is thus prepared: Take 105 grains of Arsenious-acid, and six times that quantity of pepper; make into small pills, and take one morning and evening. This is also regarded as specific for the bites of venomous serpents. In framboesia, or yaws, of the West Indies, Arsenic has also succeeded in many cases. In both of these diseases much benefit has been obtained by washing the affected parts with pure acetic or pyroligneous acid. In using any local treatment interna remedies should always be given.

Other remedies: Alum, Carb.-an., Carb.-veg., Graph., Petrol., Sepia, Sulph., Phos., Sil.

3. SCABIES.—PSORA.—ITCH.

DIAGNOSIS.—The great diversity of appearances which this disease is constantly presenting, renders a complete description almost impossible. It has been regarded by some writers of note as *papular*, by others, as *pustular*, but by the majority as *vesicular*. It consists of a pustular, papular, or vesicular eruption, generally situated between the fingers, on the wrists, near the joints, but sometimes extending over the whole body. The eruption is attended with almost constant itching, which is aggravated by scratching, or by the heat of a fire, or of the bed. The disorder is decidedly contagious in its character, and according to Schroen, “never gets well of itself; but will last for years, and may exist upon the skin a whole life-time, if its cure is neglected.”

Itch vesicles ordinarily make their first appearance between the fingers and in the palms of the hands; and their presence is more evidently manifested by a violent stinging and itching, which is increased at night. This exacerbation is attributed to the changes of temperature to which the animalcule is subjected during the process of undressing and exposure of the skin to the air, and also to getting warm again in bed.

The vesicles are prominent, and where the skin is thin, as between the fingers and upon the inside of the arms and thighs, are conical in shape, quite firm to the touch, and filled with a transparent fluid, which often becomes milky or puriform.

“As the disease progresses, the skin becomes rough and scaly, with numerous scattered vesicles, and is often complicated with other vesicular pustulous or papulous diseases; indeed it is not unusual, after the characteristic appearances of scabies have disappeared, to find other forms of cutaneous maladies established in their stead.”

CAUSES.—We have already given the views of Hahnemann on the latent constitutional miasms which he embraced under the general name of PSORA, (see p. 185, Vol. II.) The signification attached by him to this word will be seen at page 189. Its derivation is thus given: “The word *psora* which he selected to represent the almost universally prevalent base of chronic diseases, is from the original Hebrew—*tsorat*—signifying venom or malignity. This term the Greeks, in their translations from Hebrew writers, rendered *psora*, the original meaning of which during the lapse of ages, degenerated first into cutaneous diseases generally, then into *itch*.” (Dr. Morgan, *Amer. Homeop. Review*, Vol. V., p. 54.) How far Hahnemann accepted the common opinion that the disease known to us as scabies depends always on the existence of the minute insect called *acarus scabiei* is not perfectly clear. It is proved that he was acquainted with that insect at least thirty-six years before the publication of his Psoric Theory of

Chronic Diseases. We have already shown (see p. 192,) that he did not attribute chronic diseases to the suppression of this identical form of skin eruption, though he gives a large number of cases from the books to show the danger of suddenly repelling cutaneous eruptions of any kind by treatment merely *local*.

The true nature of scabies still continued to be a debated question, so long as few persons could find the acarus when they looked for it.

Albin Gras, a pupil at the St. Louis Hospital reported five experiments in which some living *acari* were placed on the skin and protected there. In no case did the insect effect any thing but a slight local irritation. (*Wilson on Diseases of the Skin*, p. 246.) In one instance the acari were artificially destroyed on the seventeenth day; in all, symptoms disappeared in a few days.

In 1807, Dr. Adams published in England, some observations made in the Island of Madeira on the disease produced by a parasitical animalcule called by the natives *oucoes*. In June, 1800, he made the experiment of inoculating himself between the fingers with the oucoes with the following results: "For more than three weeks little or no inconvenience was felt. From that time began frequent itchings in different parts of the body and arms, but no eruption could be discovered. In less than a fortnight later, (or five weeks from the commencement of the experiment) my arms and belly were covered with a general efflorescence, but few vesicles appeared. At this time two oucoes were extracted from my arm, but not from the vesicles." In August, "his whole body, arms and thighs, were covered with an efflorescence at the same time but few vesicles appeared." "In the mean time," he says, "my health suffered exceedingly, not only from the inconvenience produced from the itching, but about noon a quotidian fever began, with slight shivering, succeeded by a headache, dry heat, thirst, loss of appetite, and considerable exacerbation of the itching." This eruption is always attended by fever, and the remedy for it as for other fevers of the coast of Africa is "Bark."

The parasite which is capable of giving all this irritation is described as being sufficiently large to be easily detected and extracted, and their removal arrests the disease. Dr. Adams saw them "crawling on his nail," and remarked their power "of leaping with a force not less than that of a flea. Such was the case with one while it was being examined under the lens." This description was accepted as settling the question of the existence of the itch insect; but it differs entirely from any correct account of the acarus disease as known to European and American authors. The latter disease was also well known to Dr. Adams, and discriminated from that which he described as a new affection hitherto unknown.

The failure of many observers to discover the itch acarus in the

skin, and their want of success in the use of minute doses of supposed specifics has led many recent writers to doubt the existence of the insect. The description of Raspail, who demonstrated it fully in 1834, is accepted by later authors as correct.

"The acarus is never found in the vesicle, neither does it bear any numerical relation to the number of vesicles. The insect is sometimes found upon the hands, and no where else, while the patient is suffering from itching vesicles distributed over the body." Wilson says the location of the insect is "at a small dark point at the end of a whitish line, called the *cuniculus*, about a quarter of an inch in length, and leading from one of the early vesicles; this point is usually somewhat elevated above the skin, and upon inserting a needle therein, the parasites may be withdrawn clinging to the instrument."

"The insect is less than half a millimetre in diameter—that is, less than a quarter of the height of one of the letters of this text." Observed by the microscope its back presents the appearance "of certain fish whose four anterior paws and mouth represent the radical appendages which implant themselves in the skin; the back-piece has the sinuous contour of the scales of a fish; and is marked by the concentric and netted stria which form a fusiform net-work. Upon this network of lines, which produce a play of colors as would luminous fringes, there may be seen a number of small round and shining points; and upon each of these is implanted a stiff, white, blunt hair; the two rows which go from the back to the interior and to the sides of the arms have the longest hairs. The beak is purplish, flat and round, carrying four acute hairs, which are directed from behind forward; the beak is inserted and may be concealed under the back piece. The four feet are purplish, transparent, and show three of their four or five articulations, beset with hairs; each is terminated by an ambulacre, formed of a rigid stem and spread at the extremity. Towards the posterior part of the body are seen four long hairs which belong to four pair of feet which are concealed under the belly.

The acarus when walking has the appearance of a tortoise from its general organization and its torpor. Its transparency and whiteness give it a soft appearance under the microscope; but on taking it on the point of a needle, it is found hard and of such a horny texture in all its parts, besides its stiff hairs, that it requires more force than the prick of a pin to crush it.

Authors recognize several distinct forms of scabies :

1. *Scabies Sicca*, pimply, or dry itch, most common in adults. This form, when repelled, often gives rise to a "nervous apoplexy," ascites or chronic hydrocephalus, and it is best treated by *Sulphur*, *Mercury*, *Causticum*, *Carbo-veg.*, *Psoricum*, *Sepia*, *Lachesis*, and *Veratrum*.

2. *Scabies vesicularis*, or *common itch*, occurring commonly in high

lands, very rarely in low, swampy districts. When this form is abruptly repelled, it gives rise to serious affections of the cerebral and pulmonary organs, and to the nervous system. *Sulphur* is undoubtedly the appropriate specific, and should be given in the first trituration. In obstinate cases we may employ one or more of the following medicines: *Paricum*, *Sepia*, *Hepar-sulph*, *Araenicum*, *Rhus*, *Mercur.*, *Iodine*, *Copabar*, *Calcarea-Carb*.

3. *Scabies Purulenta*, appearing in the form of a yellow and prominent pustules between the fingers and toes. In this form, Schrein advises *Sulphur*, *Antimonium-tart*, *Sepia*, *Cicuta*, *Lycopodium*, and *Mercurius*.

Mercurius.—Itch-like or rash-like eruptions, which easily bleed; pustulous eruptions, with nightly itching and raging pain in the forehead; eruptions on the abdomen and thighs; eruption resembling scabies on the lower limbs, sexual organs; on the bends of the knee, neck, and abdomen: pustules raised, red and itching, dry eruptions. Swollen spot, on which a gray, flat scurf gradually makes its appearance, without moisture; after the eruption the swelling and pain which preceded disappeared.

Sulphur.—This is undoubtedly the principal specific for acarus itch, or true scabies. It must be given for a considerable time in high or low attenuations.

It is not claimed in this day that it will soon exterminate the disease when given internally alone; but it is evidently safer to give it in some form for a considerable time before any external applications be tried. That it will, when locally applied in strength, cure the true acarus disease is not disputed; but it is common to mistake eczema, impetigo, and other itching eruptions for the true scabies, and these itch-like affections are not curable by external applications of Sulphur or indeed of anything else. They are always curable by proper internal treatment, and there is therefore no excuse for hazarding the perils of the repelled eruption without any benefit in return. Concerning the external use of Sulphur in true scabies Jahr says: "This acarus itch admits of a more external treatment with the Sulphur-ointment, without exposing the patient to the danger of contracting secondary diseases." He would not be understood as sanctioning "the treatment by external applications, of the various itch-like eruptions where the acarus is not present. These are the eruptions to which Hahnemann's psora doctrine should be applied, and the suppression of which by washes and salves will induce the various secondary affections enumerated by Hahnemann and Autenrieth."

All the popular modes of using Sulphur for itch include its combination with lard. It is well known that the lard without the Sulphur is certainly destructive to the acarus or any other insect. Hebra and

others found inunction with lard as efficient without Sulphur as with it. In the same manner anointing with oil was formerly relied upon to cure the plague as well as other epidemic and contagious diseases. It has been tried in scarlatina with a success that may warrant further trials.

If local applications must be made to destroy the scarus in itch, an effectual one, which is, perhaps, the least offensive of any of them, is found in a lotion of *Chloride of Lime*, first proposed by Derheims. A solution, containing one-fiftieth of its weight of the Chloride applied frequently during the day allays the intense itching in a few hours, and accomplishes a cure within a few days. We have succeeded with it in several itch-like eruptions which had defied internal remedies.

In Germany, the use externally of the *Schmier-Seife* is universal. It is prepared by boiling fish or other animal oils with an excess of lye, composed of caustic Potash and the crude Carbonate. It is common to employ it by saturating a coarse cloth with it, then thoroughly rubbing over every part as a soap, then rubbing dry. Repeat every evening till the itching ceases; which will be in three or four days.

The Vienna-salve.—Sapon.-virid, Axung ää, 3 parts, Flor.-sulph. Picis-liquid ää, 1½; Creta.-alb., 1 part.

Hebra's Unguent for Scabies.—Flowers of Sulphur, Oil of Beech or Cade, ää žij.; Schmier-Seife, Axung, ää žxvj.; Chalk is added when necessary to remove the epithelium more rapidly. In some cases he uses Alcohol instead of fat. The Alkaline Soap, when applied to a burrow, produces at once an exudation into the same, which causes its immediate recognition. Its later effects are to dissolve the epithelium, and allow the Sulphur to come directly to the animals. The Tar, Beech, or Juniper Oils are added to prevent the production of excoriation or eczema by the excess of alkali and friction.

Ptyriasis Versicolor.—The intolerable itching betrays the existence of the fungus—the *microsporon-furfur*. The itching immediately ceases after a few applications of the *Schmier-Seife*, which causes the death of the fungus; its effect upon the patches is wonderful. A soap (says the *Boston Medical and Surgical Journal*, Vol. LXI., p. 229,) which should be both cheap, cleanly and effectual, is “certainly a long-looked-for desideratum in this class of diseases.”

Glycerine Ointment.—Proposed by Professor Simon, as a most elegant excipient, is composed of five parts of Glycerine and one part of Anylum. It forms a smooth, butter-like substance, free from smell, exciting no chemical action, and unaffected by temperature. It is preferred to any other substance for its elegance, freedom from repulsive odor, does not irritate tender skins, can be kept in large quantities for a long time, extracts and soluble salts may be mixed with it, and their absorption thus promoted. It does not spread beyond the parts to •

which it is applied, and can be removed with great facility. *Vergleichende Zeitschrift*, Dec. 1860, p. 412.)

Mercurius-vivus.—In our earlier years of practice, we met with the following case: In a malarious neighborhood two sisters (twins) aged fifteen months, were attacked with intermittent, following remitted fever; both had convulsions at the access of the paroxysm, which was an imperfect chill with imperfect reaction. The chills recurred daily, and were, after some days, suspended with Quinine in empirical doses. The two children had thus far progressed equally towards recovery; in their future course they diverged widely. One seemed perfectly relieved of fever and brain irritation by an eruption over the whole scalp, (a thing common as a sequel of intermittent.) The other girl had no eruption on the skin; and, though she recovered perfectly from the fever, she continued to have returns of the convulsions; became confirmed epileptic; and grew up a hopeless idiot. We saw them fourteen years after the attack of fever. The idiot had become the larger of the two; her hair and figure were fine, but intelligence was entirely wanting. Her sister was intelligent, but her head continued destitute of hair; the head was entirely covered with a moist, scaly eruption, in many places raw and bleeding. It was supposed that any effort to cure the external disease would consign this girl to the same condition as her epileptic, idiot sister.

We made the effort to cure the constitutional dyscrasia by giving a fine trituration of metallic Mercury in such a form that the quantity of Mercury given was equal to one-eighth of a grain of blue-pill four times a day; and this course was kept up for two months. By this time the appearance of the scalp was so much improved that we resorted to use some external lotions which hastened the formation of its new skin. The hair grew at first very fine and soft; in a few months it was of the usual length and appearance. Her general health instead of being injured by curing the "scald head" was perfected by it, and years afterwards she continued well.

Apis-mel.—Case by Dr. Bayard.—A gentleman, aged thirty, returned to New-York from a tour in the West. He was much troubled with an eruption of a vesicular nature between the fingers, with intense itching, and inclined to ulcerate. The rest of the body was covered with a dry, red, raised eruption, attended with uncomfortable itching. *Lycopodium 30^o* and *Sulphur 30^o* were tried for a few days, at the end of which time he returned, complaining that he had no rest at night from a *stinging, burning eruption*, which almost set him distract. Three globules of *Apis-mel. 30^o* were given in the evening, the dose to be repeated every third hour for three times. In a half hour from taking the first dose he was relieved from the burning and stinging sensation. It was permitted to act ten days, after which

there was a slight return of the symptoms. Under the use of a few globules of the 200th dilution of *Apis*, the disease gradually disappeared.

Psora Guttata.—*Arsenicum*.—Mr. Hunt, of Margate, England, published in 1847, a volume on certain intractable forms of chronic skin-diseases. He says (page 14), that he cured permanently a case of psora guttata in a family of delicate habit, intolerant alike of all mineral medicines. His remedy was one-fourth of a drop of Fowler's solution of Arsenic, taken three times a day for a few weeks. Fowler's solution is a solution of Arseniate of Potash, in which Arsenious-acid and Potash are present in about equal quantities. The British and Foreign Review (allopathic) says, each of the above doses contained only the 480th part of a grain of white Arsenic or Arsenious-acid; or perhaps equal in comparison to the weight of the person as one to 705,600,000. Perhaps doses still smaller would have answered as well, but they were not tried.

Pustular Eruption.—*Apis*.—Case by Dr. Bishop. It commenced with small pustular formations just under the cuticle, with burning, smarting, stinging sensation; on coming to maturity, deposition of dry, scabby matter in a laminated form, scaly, brownish, and sometimes straw-colored; looseness of the bowels for three or four weeks. No abatement in symptoms followed the use of *Rhus* or other antipsorics. *Apis* 1, to be taken every twelve hours, caused a speedy and effectual cure of both the diarrhoea and eruption. There was no return of either.

REMEDIES APPLICABLE IN VARIOUS AFFECTIONS OF THE SKIN.—*Lycopodium*.—Itching eruption at the anus, painful when touched. Freckles on the skin. Yellowish humor behind the corona glandis, with dark-red, soft elevations, which smart and itch; pimples on the arms filled with pus, burning pimples between the scapulae; red pimples around the neck, with itching.

Graphites.—Tinea, humid and dry; erythema; humid eruption on the scrotum; itching pimples; small red itching pimples, with their tips full of pus, frequently appearing on the skin; they burn after scratching, and disappear on the following day. Small pimples without sensation at night, all over the body, passing off again in the morning. Itching pimples full of acrid water here and there.

Rhus-toxicodendron.—Scurfs over the body; eruption on the scrotum, with swelling of the prepuce and glans; inflamed blotch on the middle of the finger, with itching-burning pain, sometimes passing into a stitch. Small vesicular tubercles like the bites of insects, in the joints of the hands, feet, particularly around the outsides of the ankles; tubercles and vesicles on the knees, and shoulder joints; tubercles here and there. Zona or shingles.

Rhus-vernis.—Hard elevated blotches, with watery vesicles on the hands. Itching blotches in the palms of the hands, deep under the skin.

Kali-bichromicum.—Small red elevations, with a dark centre and elevated circumference, itching and slightly painful; papular eruptions on the fore-arms, lasting a few days, recurring frequently. Heat and itching of the skin, at night in bed, followed by the breaking out of reddish hard knots on the thighs and legs, from the size of a pin's head to that of a split pea, with a depressed dark scurf in the centre, surrounded with an inflamed base, declining in two or three days.

Ammonia-carb.—Red tubercles around the elbow, cutting and painful, sometimes ulcerated, also on the neck.

Ammonia-mur.—Large blotches and indurations deep under the skin, upon a hard base; itching first, then burning after being scratched; inflamed, with red-brown scurf which remains inflamed for a long time, with swelling of the part.

Juglans.—Violent burning and itching on the right fore-arm near the bends of the elbow; violent burning and itching on a red spot as large as a dollar, in the centre of which a little tubercle was formed; next day the spot had disappeared, the tubercle had grown and was painful; it gradually dispersed without breaking.

GENUS IV.—MALIS.—CUTANEOUS VERMINATION.

1. MALIS FILIARIA.—GUINEA WORM.

FILARIA.—A genus of the class *vermes*, order *Intestina*.—Body cylindrical, filiform, equal and quite smooth. Mouth terminal, more or less perceptible, simple, with a roundish concave lip. There are about eighteen species.

Filaria medinensis, the thread worm, is found both in the East and West Indies; it is often seen in the morning dew, from which it enters the naked feet of the slaves, and creates a troublesome itching, frequently accompanied with inflammation and fever. There is great difficulty in extracting it from its hold; the only method is, by cautiously drawing it out by means of a piece of silk tied round its head; for if, by being too hasty, the animal should break, the part remaining under the skin grows with surprising vigor and occasions an alarming, sometimes fatal inflammation. It is generally twelve feet long and not larger than a horse hair.

The explorers of Africa in the last century attributed the Guinea worms in their bodies to the water they drank from the ponds; and as a prophylactic they drank sea-water brought up by divers from a depth of fifteen or twenty feet. They described the worm as about one foot long, the size of a hair. They cause intense pain; the patient could neither sit or lie, walk or stand with any comfort; some were affected with a fit of insanity. In some "the symptoms begin with cold shivers

ings, in others with burning heats. In some there comes a large swelling, under which the worm can be plainly seen; in others they break out in carbuncles and ulcers, which are largest in the parts that are most muscular. The negroes did not use any remedy, but permit them to come out, and then they wash the part with salt water and fresh butter mixed with salt. When the worm appears so that it can be taken hold of, they fasten its head to a small stick to prevent its returning when it moves forward. In winding the worm round the stick, if the animal should break, the wound becomes dangerous, and is often fatal. Sometimes when one worm is extracted another shows itself at the same place, and many persons have several of them at a time in different parts, causing a degree of distress that is not to be described. One writer says, "The pain produced by these worms is so excessive that a man would renounce all the prospects of profitable trade on this coast rather than endure it."

GENUS V.—ECPHYMA.—1. CORNS.

Corns are excrescences or thickenings of the skin of the toes or feet, caused and perpetuated by continued pressure; this produces hypertrophy of the papillæ of the derma, which hypertrophy is kept up by the irritation induced by the pressure and friction of the affected part.

Varieties.—1. *Soft Corns.*—These are always located between the toes. They never become hard, are never deeply seated, do not project much above the surrounding surface, but are kept flat by the pressure to which they are constantly subjected. They are caused by the pressure of the joint of a toe to the side of a toe next to it, by a shoe too narrow. When the pressure is very great it produces inflammation and even suppuration. The soft corn begins with a burning or scalding feeling between the toes. A blister is formed, and the escaping serum irritates the surrounding skin, inflames it, and a new, thick series of layers take the place of the cuticle, and thus the corn is produced. It now feels as if a gravel or seed was between the toes, and sometimes causes a crack in the skin. If a soft corn is not removed, ulceration often follows, with inflammation of the foot, which is painful and may extend up the leg.

TREATMENT.—Remove the thickened skin with fine sand paper, or extract it when sufficiently developed. Then when the spongy part has been removed and the surface looks quite red, the pain will cease. Lint should be worn between the toes to avert pressure. When the disease has lasted long the spongy structure becomes a regular growth. In bad cases, direct perfect rest, and fomentation of the limb may be necessary. For slight inflammations between the toes a piece of lint, wet with cold water will be beneficial; it may be inclosed by

strip of oiled silk passed round both toes. The application of violent remedies, as nitric-acid or aromatic vinegar should be avoided.

Festered Corns.—The toes have in some instances been drawn out of their natural position, so that the joints become prominent; the skin over the joints becomes thin and stretched; severe pressure or friction on these projecting points produces a painful and troublesome festered corn. The skin over the joint first becomes red and sensitive; it then becomes slightly thickened, semi-transparent; inflammation follows, and then suppuration under the whole extent of the hardened surface. The corn formed in the centre of the induration seldom exceeds in size the head of a large pin, decreasing inwardly to a thin thread-like point. This excites vascular irritability and rapidly causes suppuration in the bursa beneath. When the corn is extracted a part of the sac of the bursa adheres to it. When the bursa is diseased without any thickening of the outer skin, the only external appearance is the redness and swelling of the toes, with a very small white spot, having a minute speck in the centre, usually situated upon the most prominent part of the joint; the serous fluid effused now causes great irritation, exruciating pain, and violent inflammation, extending even to the whole foot.

The treatment is generally limited to soothing local applications, cooling lotions, rest in the horizontal position, until the inflammation subsides.

Mr. Dowie, of Charing Cross,* and Dr. Meyer, of Zurich, have published works which propose to save the suffering caused by badly constructed shoes. The work † of the latter shows that, in the external shape of the foot, a straight line drawn through the centre of the great toe, if prolonged to the heel, would pass through its centre; and he says, the sole of the shoe, in order to fit the normal foot, should be constructed as to allow the great toe to have its normal position in the shoe. In the sole of the shoe, as usually constructed, a straight line drawn through the centre of the great toe as it lies in the shoe falls to the inside of the heel. The great toe thus pushed out of its proper position is injured at its metatarsal-joint, its ligaments strained, the joint itself partially dislocated; the bruise over the joint produces bunions; and in the case of a gouty subject, the common seat of the gouty attack is this much injured portion of the imprisoned toe.

Nervo-vascular Corns form on the projecting part of the toes of persons whose skins are unusually vascular. They readily inflame from the slightest pressure; the covering of the affected part becomes thickened, semi-transparent, showing villi, or nervous fibres clearly visible,

* The Foot and its Covering. By James Dowie. London: 1861.

† Translation. Edinb.: 1863.

running in zig-zag whitish lines within the induration, and small corns appearing between them like white specks, corresponding in form to the cells or depressions they occupy.

Although the outer skin of these corns is as insensible as any other thickening, the intermingled nervous filaments are so exceedingly sensitive to pressure, that the softest leather of any shoe can scarcely be borne, and the least touch in attempting to remove any part by an operation gives the most excruciating pain. The reason for this extreme tenderness is the severe degree of pressure which causes a more intense inflammation than that which produces the ordinary thickening; the whole portion of the true skin subject to compression participates, and its vascular structure, together with the nervous fibres, become enlarged to such an extent that when the inflammation has been partly subdued by the removal of the shoe, by poultices, or by any other means, the enlarged structures do not return to their normal condition but constitute a net-work within whose meshes is deposited the adventitious matter produced by the thickening of the skin that is continually going on, and which, becoming condensed, forms small corns situated between the nervous fibres. When the inflammatory action has entirely ceased, the nervous filaments remain completely matted within the outer skin.

This species of corn, cut unskilfully or improperly treated, often produces serious consequences, even ending in some cases in death following on mortification; the persons most liable to this termination are those advanced in life, in whom the circulation of the lower parts is enfeebled.

The *Treatment* relied on consists of palliatives; as: application of lint dipped in cold water, and covered with oiled silk or gutta percha; this with rest, the avoidance of pressure, soon diminishes the irritation. The thickening skin may then be carefully removed without giving much pain, if the fibres of the nerves are not touched by the instrument; pressure of the shoe must also be avoided.

In the chronic form there is not much inflammation, but the skin is much thickened, and must be scraped off until the white lines and intermediate specks are visible. The corns can then be carefully picked out from between the filaments, great care being taken in the operation to avoid pricking them or producing haemorrhage, as that would give excruciating pain, and might cause inflammation. Apply wet lint for a few days; afterwards a soap cerate plaster may be worn as long as necessary. This treatment after some time causes the nervous filaments to disappear, leaving only a slight thickening, which causes little or no pain.

Vascular Corns.—Painful vascular excrescence on the soles of the feet, under the side of the heel, on the little toe, or by the edge of the

nail of the great toe. It more resembles a wart but they come in parts not subject to pressure, are seldom painful and grow without apparent cause; but this excrescence is always caused by pressure, occurs neither in childhood nor old age, seldom in females, and is always painful. It is deep-seated, spongy or vascular, forming a circumscribed tumor projecting a little above the level of the thickened skin. The whole surface becomes studded with red or black specks, and the surrounding skin inflames and swells, becomes very sensitive, aches and throbs. When the minute extravasations are not distinctly defined, the excrescence appears as a softened tuft composed of apparent vascular fibres of unequal length. The effort at extermination by the knife causes considerable haemorrhage from the wounded vessels.

Treatment.—This form of corn, not being malignant in its nature, is cured by the application of nitrate of silver and never returns. It should be incised superficially before each application.

Laminated Corns.—The laminae of the epidermis are distinctly apparent, in some cases the different strata are of different colors as light or dark brown or black, the different colors being caused by the effusion of serum or of blood under the epidermis or among the epidermal cells which are not absorbed; the ecchymosis being carried towards the surface by the formation of new layers, changes color, and fades or remains quite dark.

Fibrous Corns, are caused by continuous pressure upon the prominent portion of a common or hard corn, that has long continued until the pressure has caused absorption of the papillæ, and a part of the structure of the derma. Continued pressure produces a cup-shaped depression, the skin becomes thin under the corn, the papillæ are removed by absorption, the skin becomes horny, and of a darker color, the edges of thickened epidermis rise as the central part is depressed, and the corn appears to be composed of fibres.

Treatment of ordinary hard corns. Soak the foot for a long time in warm water, after which much of the thickened epidermis can be carefully cut away with a sharp instrument. The corn must be protected from pressure, either by laying on it successive strips of adhesive plaster having a hole cut in each piece to let the corn project through it; or a piece of soft sponge cut out over the corn can be tied on the toe; or thick soft buck-skin may be tried. A piece of amadou is better. Cleanliness is highly important.

The thickened epidermis may be removed by scraping, filing, rasping with fine sand-paper, or cutting; alkaline caustics and various plasters have been recommended; but they are all too powerful, except, perhaps, Acetic-acid. When the corn is very soft, solid Nitrate of Silver is applied to its surface to harden it, and then the file or knife

may be used without pain. Hard corns are softened with a warm alkaline foot-bath.

The mode of extirpating corns by chiropodists is to cut and tear out the central portion, leaving the external portion to take off the pressure from the more tender part at the centre. Some use Tincture of Iodine, but without real benefit. Acetic-acid is better; it may also be used after extirpation by some other means. When a sinus forms under a corn, or there is suppuration, or the formation of a bursa between the corn and the bone, remove the corn; and then dip the point of a stick in strong Nitric-acid, and apply it in the sinus or over the newly-forming granulations. The application must be made with caution when the bursa is near the bone.

When a corn is under the nail, remove the whole or a part of the nail to get rid of its pressure, and treat it as before directed.

For local treatment of corns the people have many remedies as: a leaf of ivy saturated with vinegar, bound on the corn; lint soaked in a fluid composed of Muriate of Ammonia, 1 ounce, dissolved in 4 fl. ounces of water; or a powder composed of Savine-leaves, 2 ounces; Verdigris, 1 drachm; red-precipitate, 2 ounces, pulverized and bound on and kept on all night; also, Diachylon-plaster, and yellow-wax, equal parts each.

Sir Humphrey Davy's Solvent.—Potassa, 2 parts; Salt of Sorrel, reduced to a fine powder, mixed; a small quantity with a bandage every night for several nights.

Corns on small children can be picked out after the feet have been well bathed.

When large sinuses form under corns situated over the bone, and the skin and parts surrounding the sinus are much thickened, the sinuses being the result of suppuration of a bursa under the corn which is unable to form healthy granulations, it is necessary to enlarge the sinus and excite new action in it. For this purpose it is best to enlarge the sinus by incision, and then to destroy its entire cavity by means of strong Nitric-acid applied on the point of a stick of wood, only being careful not to injure the bone or the joint that may be beneath the corn. If the periosteum has already ulcerated away, apply the acid to the surface of the bone, repeating daily till new granulations commence.

2. DISEASES OF THE TOE-NAILS.

The peculiar structure of the nails renders them liable to curvature, bending under the influence of heat, of moisture or pressure. Pressure of the shoe may force them into irregular shapes. When a nail has been injured by disease, it is liable to continue in an irritable condition until it has time to grow off, being followed by the new nail.

coming on behind it. The usual time for the growth of a new nail is from four to six months, according to the condition of general health.

In cases of accidents from violent collision of the toe against a stone or other hard substance, extravasation will immediately follow the blow, and be attended with great pain; if the injury is very severe the nail becomes loosened and falls off, and a new and perfect nail will be produced. If the whole nail has not been detached, the loosened part is sometimes cut away, and this may be followed by a deformed growth. It is better, if possible, to avoid cutting the nails in any other direction than that in which they are ordinarily cut when too long. Cutting off at the edges is often followed by abnormal growths, which tend to grow into the side of the toe.

The injury caused by the falling of a heavy weight, or the stepping of a horse on the toes, is one of the most painful to which they are exposed. The soft part of the bruised extravasation extends to the secreting vessels at the root of the nails, inflammation involves the different layers of which the nail is composed; they lose their adhesion to the root, and cease to furnish support to its further growth. The injury when very severe is followed, when the inflammation subsides, by early falling off of the nail; the parts beneath are exquisitely tender till the damaged secreting glands at the root of the nail have time to supply a new nail, which is likely to be a very ill-formed and imperfect one.

In-growing Toe-nails.—This most painful of the diseases of the nails is most common in the great-toe. It is caused by the improper manner of cutting the nails, or by the flap of flesh being forced up against the edge of the nail, from wearing shoes too narrow or badly made, or from the edge of the nail becoming curved, or beginning to grow in a wrong direction after being trimmed on the side.

When pain begins to be felt at the side of the toe, it is commonly thought to result from the nail having grown too long and too wide at the corner. Trimming gives temporary relief; but the pressure of the shoe continues to press the side of the toe against the corner of the nail, the edge of which is rougher than before, the pain and uneasiness is increased, but lower down and nearer the root. The flap thickness is pushed upward still farther, and partially covers the nail, which, as the pain continues, is again and again cut, until the scissors can no longer reach the part that is supposed to cause the suffering. The consequence is, that a point is left which penetrates the flesh, keeps up and increases the previously existing irritation, produces severe pain and ulceration, and, if neglected, fungus sprouts forth from the parts most affected.

In other cases, the nail forms such a decided curve under the flap that its edge along the whole length of the toe is imbedded in the soft parts, which become so inflamed and so much swollen, that not above one-

half of the nail can be seen. Walking will increase the inflammation, and ulceration will take place in the whole length of the furrow. Under improper treatment or neglect this will continue with many persons for months, until the whole is covered with fungus, or what is denominated proud flesh. The pain will then be so severe that the weight of the body cannot be sustained upon the toe, and the patient is compelled to rest the limb.

The treatment generally relied upon in these cases has not been quite satisfactory. We omit all notice of the various mechanical means that have been resorted to, as they have failed to cure permanently, even when they palliated for the time. Nitrate of Silver, rubbed freely and repeatedly between the nail and flap, with the intention of destroying both, has sometimes succeeded when the disease did not arise from a point or sharp edge of the nail protruding into and irritating the flesh, and when the ulceration is not very extensive. This experiment has, however, been carried too far: a piece of caustic has been laid in between the nail and the flap of skin where it excited violent irritation and constitutional derangement without any benefit.

When the nail has penetrated into the flesh and ulceration has commenced, these measures are of little benefit; and the only question generally considered is the best mode of excision of a part of the nail. We have still some promising resources to be tried before we resort to a painful surgical operation.

M. Wahn, principal physician of the Military Hospital of Nice, suffered for a long time from this affection, and was disabled from walking; after trying many remedial measures, he says: "I examined again, for the twentieth time, the seat of the disease, and was struck with the idea that if I could dry up, or even tan the diseased surface so that the ulcer might be converted into a firm surface, capable of resisting the cutting action of the edge of the nail, I might obtain complete cicatrization, and consequently a cure. Running over in my mind the most energetic tanning substances, I decided on employing the *Perchlorure de Fer*, (*Perchloride of Iron*). I obtained some in a powdered form, and insinuated it as deeply as possible between the free edge of the nail and the ulcer. I felt almost immediately a moderate sensation of pain, accompanied by a feeling of constriction and a strong burning sensation. After a quarter of an hour I attempted to walk, and to my great satisfaction, I found that I could bear my weight on my foot throughout its entire length, without the least pain: a thing I had not done before for many months. The following day I carefully examined the diseased parts, and found them mummified, and as hard as wood. I applied a fresh quantity of *Perchlorure de Fer*, which I allowed to remain for a quarter of an hour, but I have reason to believe that this application was useless, as the

mummification was complete by the first process. I continued to walk without the least thought of my *ongle encarné*, and about three weeks after was able, by means of a foot-bath, to remove the hardened layer of skin, under which I found a tissue of new formation, which perfectly resisted the pressure of the edge of the nail. Shortly after the whole had returned to its normal condition, and more than ten years have since passed without a return of the disorder."

The modes of removing the nail proposed by surgeons are too numerous to be mentioned.

Ulcer caused by In-growing Toe-nails.—This is generally caused by cutting the nails close at the sides and round the corners, which starts that part of the nail to growing faster, and in a short time the corner begins again to project into the flesh. The nail should be cut frequently, but not at the corners. Bathe the feet often, and wear a shoe sufficiently wide at the toe.

3.ONYCHIA.

This disease of the nails of the fingers and toes consists essentially of inflammation of the *matrix* of the nail. It may not extend beyond the matrix, or it may, and usually does, extend so as to involve the adjacent soft parts.

It may be caused by an external injury, as a bruise by a pressure upon the end of the nail from a shoe or boot, by a foreign body passed under the nail, as a splinter, or by some constitutional derangement, as syphilis, scrofula, or eczema. It may be confined to one toe, or, if the cause be constitutional, several toes may be affected at the same time. The amount of inflammation may be slight, or so extensive as to produce suppuration, ulcerations, fungous granulations, with ichorous, sanguous, or fetid discharges, with loss of part or the whole of the nail, or even of death after loss of one or more bones of the toe. This disease is always troublesome, painful, and difficult to cure.

TREATMENT.—When caused by external injury, the treatment must be conducted with reference to the degree and nature of the injury. If pus forms beneath the nail, it can be let out by carefully making an opening through the nail. A foreign body beneath the nail must be removed. If caused by pressure of a hard boot or shoe, the pressure must be removed, and the patient kept quiet in the horizontal position, and treated as for *in-growing nail*.

When onychia depends on general eczema, the treatment proper for that disease must be followed in connection with proper local treatment.

When the constitution is scrofulous, the onychia usually begins at the nail. This form is more commonly seen on the fingers.

Syphilitic onychia is also most common on the fingers, and is accompanied with syphilitic eruptions on other parts of the body. The matrix of the nail frequently turns red, swells, suppurates, and ulcerates. The skin around the nail becomes puffed and swollen, and the entire extremity of the toe becomes enlarged, while the suppuration, ulceration, and fungous growths at the edge of the nail increase so as to partly overlap the nail, and give the toe an appearance as of the ordinary nail. The nail may at the same time become discolored, brittle, altered in thickness, rough, and even fall off.

As the general disease is cured, the local affection disappears, or becomes easily manageable.

When onychia appears in the malignant form, there is very great pain from the first, and destruction of the periosteum, with disease, and perhaps death of the bone, without any apparent cause, either local or constitutional. When onychia is the result of in-growing of the nail, that condition must be cured.

Local applications may be useful to correct foetid discharges; those already mentioned for other diseases of the feet may be used. Muriated Tincture of Iron will often be beneficial.

In all psoric and dyscrasie constitutions the specific remedies for such specific diseases will be necessarily employed. In eczematous onychia the Benzoated Oxide of Zinc-ointment is recommended by Wilson and others. Scrofulous and syphilitic cases require the specific treatment proper for those diseases. In extreme cases the amputation of the toe has been recommended.

4. BUNIONS.

The word bunion should be restricted to an enlargement over the first joint of the great or little toe, produced by pressure or by some other cause effecting a change in the position of the joint.

The common cause is the wearing of shoes too short and with a narrow sole; this gives too much pressure to the toes, and throws too much of the body's weight upon the articulation of the bones of the feet, impeding the action of the muscles, causing pain and inflammation, malposition of the great toe, and the ultimate formation of a bunion. It often occurs in persons of constitutional derangement, with feeble joints, and subject to pain in the joints of the foot after walking; gouty, rheumatic, and scrofulous constitutions show this form most frequently. In such persons the synovial tissues, the tendons, &c., are liable to this disease. The great toe becomes distorted in position, pointing obliquely across the other toes, leaving the shoe to press upon the joint. In persons advanced in life, the synovial membranes of the

joints become worn and secrete less fluid than is needed in a healthy joint; they become stiff, painful on motion; partially ankylosed.

A bunion consists in an enlargement or thickening of the integument over the first joint of the great toe, generally only of one foot. The pain is generally trifling at first, but it becomes more painful as the inflammation involves the joint; the skin thickens in layers or scales over the surface, and is studded with clusters of small superficial corns; if the irritation of a tight shoe be continued, the bursa between the skin and the bone will become enlarged, the fluid effused causes swelling over the joint; the pain increases and extends to surrounding parts; suppuration may take place within the bursa, which progresses slowly and with pain; the ichorous fluid may extend into the cellular tissue before it bursts externally. It may even cause caries of the bone & exfoliation of the joint.

TREATMENT.—Sensitive and delicate persons may suffer from pain in the joints of the feet when there is little enlargement or evident inflammation. The skin is tender, soft, moist, clammy. In this stage the disease may be easily relieved by a lotion slightly stimulating & an anodyne in which the foot may be bound up by a roller of two or more thicknesses. Tincture of Arnica or Belladonna will answer. Another slight affection is a small tumor on the instep, caused by a boot too tight; it is *under* the skin hard and immovable. In some cases it may progress to the extent of forming a small but sensitive *corn*.

The treatment of these distortions of the joints, whether confined to the great toe or to the small one opposite, is often confined to placing between the toes flexible sheets of lead, not too thin, so as to keep the toes nearly in their natural position.

Tumors about the toe-joint have been produced by gout or rheumatism. These are cured by wearing loose shoes of buckskin or flannel; and then the common treatment for the general disease.

A *true bunion* in its first stage appears inflamed, but is not attended with much swelling; the pain in the joint is mostly felt when the shoe is worn; in a few days it subsides, but is liable to reappear when the short, small, or badly made shoe is worn. Removing the shoe is usually relieved by changing it for a large soft one, and bathing with an alcoholic lotion.

If the irritation is continued the pain and tenderness will gradually increase in proportion as the foot is used, and is felt more in the joint under the ball and along the toe, over the instep; the skin becomes thickened, forms in scales or layers, and one or more small corns form on the surface.

This case is best treated by rest and cooling, soothing lotions; after carefully extracting the corns, a plaster of Soap-cerate and adhesive plaster may be applied over the joint. If the great toe is unduly in-

clined inwards towards the others, apply a piece of sponge or pledget of linen between it and the next toe will carry the toe outward and remove pressure from the joint.

A bunion on the outer side of the foot begins with itching, heat and pain increased by pressure of the boot. For this, the pressure must be removed, a loose cloth wet with an anodyne lotion; and, for a final cure, a soap-plaster, worn for some days.

In many cases there are constitutional derangement, influenced by changes of weather, which may cause the whole disease without irritation. In some of these cases the attack is sudden, resembling an attack of gout. In all of these cases constitutional treatment must be the chief reliance for cure.

When the *bursa* under the bunion is inflamed, confine the patient to a couch, and subdue the inflammation; and if an abscess forms, cause it to be opened; after which heal it by soothing dressings. If the inner surface of the bursa does not granulate, apply a minute quantity of strong Nitric-acid on the point of the probe. This will start a new action and the bursa will heal.

Ganglions, are usually the result of inflammations of a bursa mucosa. They may appear on the surface of the foot or instep, and may cause contraction of the extensor tendons of the toes, great inconvenience and lameness in walking.

When the ganglion is inflamed and filled with fluid effused, this should be let out by puncture, and the foot kept at rest. If the fluid hardens and will not flow, the orifice must be enlarged and the implicated tendon may be divided. In all operations on ganglions and bursæ it is only necessary to make a small opening and then rely on local measures of a soothing character, with general homœopathic treatment.

5 NÆVUS MATERNI.

PATHOLOGY.—These tumors or “marks” are formed in the erectile tissue, and are divided into :

1. Nævus in which there is a predominance of veins.
2. Nævus in which there is a predominance of arteries.
3. Mole.

TREATMENT.—John Bell advises to cut the tumor out. He says, “you must cut them out,—not cut into them.” Sir Astley Cooper cut into one as large as a hickory nut on the back of a child’s neck; the child bled to death in four hours.

Dr. Mott objected to cutting out; and also said the use of the Kalipurum was unsafe.

2. The next mode to cutting out was by using red-hot needles. This caused little pain.

3. The next method is to transfix the tumor with needles, at right angles, and strangulate them with twisted suture.

4. *Collodion*.—Cover the nævus with a solution of gun-cotton & ether. We prefer this to any of the above. (*Amer. Jour.*, Oct. 1860, p. 555.)

5. *Tartar-emetic*.—It is proposed to rub the nævus with a solution of Tartar-emetic in Olive-oil. It soon becomes covered with pustules which become confluent, and are removed by poultices. If the granulations look favorably inclined, they are touched with Nitrate of Silver.

Third species of Nævus.—Mole.—On one occasion, Dr. Mott, in a lecture on this subject, said he knew no cure for a mole. A note was sent to him recommending Labarraque's, Sol-chlorur-sodium. Dr. Mott accepted the suggestion, and said he was not too old to learn.

Acetic-acid.—Apply strong Acetic-acid to the small flat nævus, following this by compresses soaked in vinegar. This coagulates the blood in its vessels, the nævus becomes hard and yellow, and is thrown off from the parchment-like layer by a process of exfoliation. (Wilson, p. 336.)

Alum.—Apply a wet compress kept moist for a considerable time. The nævus becomes white and flat.

GENUS V.—TRICHOSIS.—MORBID HAIR.

The hairs, like the cuticle, are beautifully organized, and maintain a vital, though not a vascular connection with the body. Some evidence of their retaining a degree of vitality is found in the fact, first pointed out by Mandl, and verified by Todd and Bowman, that hairs have a tendency to become pointed after having been cut short off. The process is very slow, and seems to consist in a further condensation and elongation of the elementary cells at the new extremity.

1. TRICHOSIS POLLICIS.—GRAY HAIR.

Well-authenticated instances have occurred in which the hair has grown white in a single night, from the sudden influence of grief, or of some other depressing passion; it is thence supposed that fluids circulate through them. It is rather probable that this phenomenon results from the secretion at the bulb of some fluid,—supposed by Vasquelin to be an acid,—which may percolate the tissue of the hair, and chemically destroy the coloring matter. The ordinary gray hairs of aged persons resemble other hairs in every respect but color; and the process of changing from dark to gray seems to take place rapidly in each individual hair.

According to Vauquelin, the color of hair depends on the presence of a peculiar oil, which is of a sepia tint in dark hair, blood-red in red hair, and yellowish in fair hair. When extracted, as it may be by alcohol or ether, the hair is left of a grayish yellow. The color is destroyed by chlorine, and probably otherwise resembles closely that of the cuticle in the dark races. The substance of hairs is similar in chemical composition to that of horn. After being softened by maceration in cold Nitric-acid, it is soluble in boiling water, and the solution after evaporation becomes a gelatinous mass on cooling. The horny matter is said to be distinguishable from coagulated albumen or fibrine by its being readily soluble in caustic fixed alkalis, but not in caustic ammonia. The ashes amount to one-and-a-half per cent. of its weight; and contain oxide of Iron, a trace of oxide of Manganese, of sulphate, phosphate, and carbonate of lime, and of Silicea. Black hair contains most iron, and light hair least.

2. PLICA POLONICA.—PLAITED HAIR.

The most remarkable of all the diseases connected with vegetable growths on or within the human body is the plica polonica, which has its name from its most prominent symptom—the entangling of the hair into a confused mass. It is generally preceded by violent headaches and tingling in the ears; it attacks bones, joints, and nails, splitting them longitudinally. It often ends in blindness, deafness, or melancholy distortions of the limbs. As it progresses, the individual hairs swell at the root, and a slimy fat substance exudes, mixed with a noisome suppurated matter. The hairs now grow more rapidly; possess increased sensibility; when advanced farther, the hairs will bleed if cut near their base, others say at any part of their whole length; they twist themselves together inextricably, and become plaited into a “confused, clotted, disgusting-looking mass.” Sometimes they form into a series of cords like ropes; and in one instance, in the case of a lady, the diseased hair grew into a long agglutinated mass fourteen feet long. Disgusted and distressed with such an unpleasant appendage, patients were treated by cutting it off, but it was found that this only resulted in the most terrible consequences. “Blindness, distortion of the limbs, cramps, death or insanity speedily followed the cutting off of the hair, and it was found that the hair while so oppressive itself, was merely contributing to the cure of the constitutional disease, by being the channel through which the corrupted matter is carried off from the body.” From the moment the hair begins to entangle itself the painful symptoms which marked the beginning of the disease begin to disappear. Having discovered the relief which follows the entanglement of the hair, the peasants promote the process

of nature by increased filth, carelessness, and even soaking the hair with oil or rancid butter. After the disease has run its course the hair becomes gradually dry, healthy hairs begin to grow up under the plica, and at last they push it off. Sometimes it requires months and years to separate of itself, but at this stage it will bear to be cut off. Many have suffered from the premonitory symptoms of plica and sought relief in other countries without finding it; on returning to their own country they have been cured by the outbreak of this horribly disagreeable disease. Its origin has been generally sought in uncleanness and unhealthy food; others regard it as epidemic in Poland and Livonia, in some parts of Russia. It is supposed to have originated in Tartary, and been introduced by the Tartars into Europe, in their invasion at the end of thirteenth century. (*Russell's Tour in Germany, Encycl. Amer.*) It is easy to understand, says Carpenter, (*Physiology*, 551,) from the analogy of cellular plants, in which no vessels exist, how the fluid that is supplied to the base of the hair may find its way upwards; and there seems reason to believe, from the well-known fact of sudden change of color in the hair under the influence of strong mental emotions, that in its healthy state, fluid secreted at the base may be conveyed to its extremity. As the peasants of Northern Europe have observed a host of anomalous symptoms disappear on the eruption of a plica polonica, and from this, believe that it is a preservative against all other diseases, they, therefore, adorn themselves by inoculation, with "cultivated *Weichselzopf*". The fact that it can in that way be communicated, proves the correctness of the views already given of its nature and origin.

So numerous have been the facts which have been accumulated by the observations of a few years, which can only be explained on the cryptogamic theory of the origin of many familiar diseases, that many authors have concluded that all diseases must maintain themselves in the bodies they infest in the same way. Dr. Jahn, in the *Archiv. de la Med. Belge*, 1844, closes an elaborate article with the following summary of his views: (*Med. Chirur. Rev.*, Jan., 1845, p. 567.)

"It is now ascertained that in fermenting fluids there become developed vegetable productions of an inferior order, and in putrescent animal matter certain *infusoria*, which, in the opinion of some distinguished naturalists, are generated by spontaneous formation; although, when once formed, they may propagate themselves by a process of vegetation. Now it is probable that not unfrequently those morbid conditions,—which consist in the supervention of similar decompositions in some part of the body, in the *crystoblastema*, or in the primitive molecules of the fermentation and putrefaction,—and consequently the chemical elements of the *crystoblastema* or of the molecules, experience a derangement in the attraction, which is indispensable to the

continuance of the organization in a healthy condition; this derangement being occasioned by certain external agencies which entirely overpower the dominion of the general vital powers. Among these derangements we may enumerate various diseases, gangrenescences, putrescencies, &c." But in these conditions there may possibly be developed, by spontaneous generation,—that is by the "*ever-acting creative power of Nature* on organic matter in a state of decomposition certain powers or properties," as are shown in fermentation or putrefaction.

Albino.—Selma Adams, of the Brothernout tribe of Indians, residing near Clinton, New-York, gradually became white during the last thirty years of his life, retaining his mental faculties in full. The change commenced soon after an attack of rheumatism in a small white patch on the pit of the stomach, and it gradually extended; other spots appeared in other places and spread to other points. He tried the effect of the mineral springs to arrest the change in his skin; but finding no effect from the waters, he finally resigned himself to his fate, saying he was compelled to submit to become "like the white men in everything but their dishonesty." (Letter from Dr. Bissel to the *Ed. Eclectic Jour.*, Columbus, Ohio.)

Sclerema.—A boy in the Hospital des Enfans Malades, at Paris, showed the surface of the chest as firm to the touch as a cuirass. The general health seemed good; there was no fever or pain; on pressure the skin, over every part, except the palms of the hands, soles of the feet, the ears, lips, and eye-lids, gave the feeling given out by "a membrane of considerable power of resistance on the tight stretch." There was no change of form, no swelling, nor pitting on pressure. The boy said he only felt a little stiffness for a week back. The heart gave a strong mitral bellows-sound; the urine nothing abnormal; no albumen, sugar, or excess of any ingredient. It is probably an extraordinary condensation of the cellular and adipose tissues.

WARTS.—*Acetic-acid.*—They may be effectually removed by the strong acid. First carefully pare it down, then apply the acid with a camel's hair brush, and subsequently apply compresses soaked in vinegar in contact with the part.

Bichromate of Potash has often cured warts on the face.

MALIGNANT WARTS.—*Arsenicum.*—Dr. Leon, then of New-Orleans, gave* a case of a lady, aged thirty, who had six painful warts on the back of the right hand, which prevented rest at night. They were of the size of a pea, very red and angry-looking; pains burning and pulsating, extending up the arm to the axilla, rendering the arm useless. Gave six globules of *Arsenicum*, 6°, dry, on the tongue. On the

* U. S. *Jour. Homœop.*, Vol. I., p. 43.

second day after taking the remedy all pains had ceased, on the fifth day the warts began to assume a blackish aspect and to shrivel up, the tenth day they all fell off, and left a perfectly healthy surface. year after there had been no return of the warts.

Internal Remedies.—*Causticum* will frequently cause warts to appear when they are fleshy or seedy.

Antim crudum.—Warts flat, hard and brittle.

Dulcamara.—Warts on the back of the fingers.

Calcarea carb.—Warts on the sides of the fingers.

Fresh meat—rub on warts & han raw. let dry—repeat every 4
times till warts disappear.

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